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BRIEFING PAPER ON

MONTANA'S
TOTAL MAXIMUM DAILY LOAD (TMDL) PROCESS

Section 303(d) of the
Clean Water Act

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I. ACRONYMS AND ABBREVIATIONS

ARM - Administrative Rules of Montana
BLM - Bureau of Land Management
BMP - Best Management Practices
CFR - Code of Federal Regulations
CPP - Continuing planning process
CWA - Clean Water Act
DEQ - Department of Environmental Quality
DHES - Department of Health and Environmental Sciences
DNRC - Department of Natural Resources and Conservation
EPA - Environmental Protection Agency
FWP - Department of Fish Wildlife & Parks
LA - Load Allocations
MCA - Montana Code Annotated
MOS - Margin of Safety
MPDES - Montana Pollution Discharge Elimination System
MSU - Montana State University
NPDES - National Pollution Discharge Elimination System
NPS - Nonpoint Source
TMDL - Total Maximum Daily Load
UM - University of Montana
USFS - United States Forest Service
USGS - United States Geological Survey
WETA - Western Environmental Trades Association
WBS - Water Body System
WLA - Waste Load Allocations
WPM - Waste Management Plan
WQA - Federal Clean Water Act
WQS - Water Quality Standards
WWTP - Waste Water Treatment Plant
303(d) - Section of the Federal Clean Water Act
305(b) - Section of the Federal Clean Water Act

II. EXECUTIVE SUMMARY

Montana in general has good water quality. However, there are about 53,000 miles of perennial streams in Montana. Only about 17,500 miles or about 33 percent of these have been examined (assessed). Of the streams in Montana that have been examined approximately 14,000 miles or 79 percent do not fully support their designated or expected uses. The department has focused it's efforts on streams that are known or expected to have problems. Thus, we cannot extrapolate from these figures. It is likely that The majority of streams that do not support their uses have been assessed or monitored. There are 900 streams and lakes (water bodies) in Montana that are not in compliance with state water quality standards, and thus do not fully support all of their designated uses.

Water bodies can be affected by both point source and nonpoint source pollution. Point source pollution is pollution that can be identified from one source such as waste water treatment plants or industrial complexes. Nonpoint, on the other hand, is a diffuse form of pollution where the source is not easily identified. Nonpoint source pollution includes sediments, nutrients, and salinity brought about by land use practices. In many cases, water bodies are impacted by both point and nonpoint sources. The Federal Clean Water Act Requires the use of the Total Maximum Daily Load (TMDL) process to restore these water bodies so the they once again support their designated uses.

The Total Maximum Daily Load (TMDL) process determines the total amount of pollution, or other change, that a water body can tolerate and still meet water quality standards. The TMDL process starts with a determination that water quality standards for a particular water body are being violated and that there are interferences with one or more of the water's designated uses. This is reported in Montana's *List of Water bodies in Need of TMDL Development* (the "303(d)list"). The next step is to determine the maximum amount of the pollutant that could enter the water body without violating standards. This prediction is based on the dilution, transport, and transformations of the

pollutant by using various modeling techniques. A safety factor is incorporated into the calculation to account for the uncertainty of the process. The result is the Total Maximum Daily Load (TMDL). The total pollutant contributions to the water body must be reduced to this new level. The process of determining how much each contributing source must reduce their input of pollutants is called allocating the load.

Pursuant to the federal requirements, Montana has published lists of water bodies that do not meet water quality standards every two years since 1992. The 1996 list includes nearly 900 water bodies. Montana also has complied with the requirement to prioritize and target these water bodies for TMDL development. Although a number of TMDLs have been initiated, as of December, 1996 only one formal TMDL has been completed and the impaired water body, Deep Creek, "de-listed." Montana clearly is not addressing its water pollution problems and the requirements of Section 303(d), in a timely fashion.

The failure of states and EPA to implement the requirements of Section 303(d) is the subject of considerable past and present litigation (see *Appendix* A).. Montana's failure to make better progress in developing TMDLs leaves EPA vulnerable to lawsuits. If litigation occurs, a court may order EPA to take over the states's responsibilities of listing impaired waters and developing TMDLs.

As of December, 1996 EPA was under court order to establish TMDLs for three states, and litigation has been filed in 13 states. The litigation seeks to compel EPA to do some or all of the following, depending on the case; perform state wide monitoring, develop lists of impaired waters, develop schedules for listing and/or TMDL development, schedule completion of all TMDLs in a state within five years, withdraw state authority to operate a discharge permit program, cease issuing or renewing discharge permits, and consider the endangered species act in developing lists of impaired waters. In addition to the cases that have been filed, notices of intent to sue have been filed with respect to seven states, including Montana. The Montana notice specifically identifies the failure of the state to list all impaired waters and to develop TMDLs. There is no way to

predict the content of a suit if one is actually filed. If the suit succeeds the state could be forced to accept whatever the court orders.

Late in 1996, DEQ was approached by representatives of business and industry who were concerned about Montana's slow progress in developing TMDLs and the threat of litigation. They expressed the need for an active approach to address the issue. A dialogue was begun between DEQ, conservation groups, and industry representatives to gage interest in developing TMDL legislation. DEQ made a commitment to take the lead in this effort by preparing a briefing paper on the TMDL issue and hosting several meetings to solicit input from interest groups. Draft legislation was developed and critiqued. A work group composed of business, industry and conservation groups met regularly for several weeks to try to reach agreement on the bill's content. Overall progress was excellent and agreement was achieved on most issues. The package was submitted for bill drafting on January 29, 1997.

The major elements of the TMDL bill are as follows:

- Clarifies authority to monitor water quality and develop and implement TMDLs,
- Enhances public and stakeholder participation in the TMDL process,
- Establishes a process for listing and de-listing waters,
- Establishes a data system for verifying credibility of information used to make list,
- Requires de-listing of waters lacking sufficient credible data,
- Requires reassessment of de-listed waters,
- Establishes criteria for prioritizing waters for TMDL development,
- Establishes a ten year schedule for developing TMDLs for the waters on the 1996 list,
- Provides interim protection for new or expanded development activities affecting listed waters,
- Provides incentives for voluntary measures which address impairment problems,

- Requires DEQ to support local voluntary efforts to restore water quality,
- Requires long term monitoring to assess TMDL effectiveness, and
- Recognizes existing water rights.

Implementing this legislation will require nine full time employees plus four temporary personnel during the summer field season. The first year will require funding of about $690,000 and the second year will cost about $770,000. The required funding will increase to over $900,000 by the fifth year.

III. PURPOSE, STATEMENT OF THE PROBLEM AND GOALS

A. Purpose

The purpose of this document is to: 1) explain the programmatic elements and requirements of the Total Maximum Daily Load (TMDL) process as established by Section 303(d) of the Federal Clean Water Act and by the EPA's Water Quality Planning and Management Regulations (40 CFR Part 130), 2) examine the current approach used by the Montana Department of Environmental Quality (DEQ) to administer TMDLs, 3) identify shortcomings and their causes, and 4) identify alternatives to the current approach for improving the department's ability to protect and restore water quality in threatened and impaired lakes and streams.

B. Background

Section 303(d) of the Federal Clean Water Act establishes the Total Maximum Daily Load (TMDL) process to provide for more stringent controls of pollution sources where technology-based controls are inadequate to achieve compliance with state water quality standards. The term TMDL refers to the total maximum load of a water quality parameter that a water body can assimilate without violating water quality standards and to the process of allocating that load. TMDLs determine a water body's maximum allowable loading (or assimilative) capacity for a pollutant (loading capacity - LC) and allocate that load among point sources (waste load allocations - WLA), nonpoint and natural background sources (load allocations - LA), and a margin

of safety (MOS) that accounts for uncertainties about the relationship between the pollutant loads and the quality of the receiving water. The TMDL process is a method for weighing the competing pollution concerns and developing an integrated pollution reduction or protection strategy for point and nonpoint sources. The TMDL process is intended to "broaden the opportunity for public participation, speed up water quality-based National Pollutant Discharge Elimination System (NPDES) permitting, and lead to technically sound and legally defensible decisions for attaining and maintaining water quality standards" (EPA 440/4-91-001, April 1991). The TMDL process also provides a mechanism for integrating the management of both point and nonpoint source pollution that contribute to a water body's impairment.

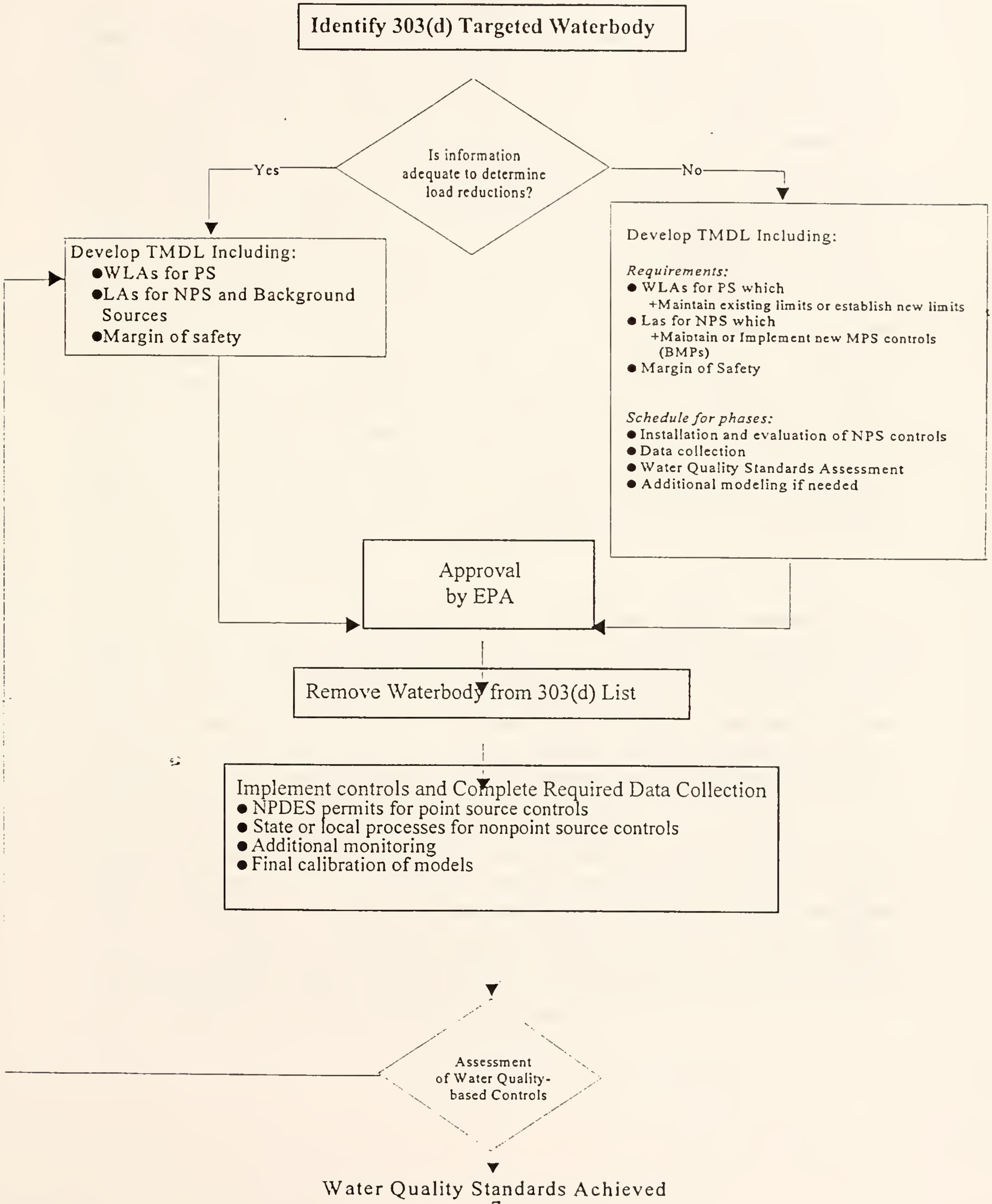
The TMDL approach to water pollution control consists of five steps described in the Clean Water Act and the federal regulations. These steps are: 1) identification of waters not meeting water quality standards, 2) priority ranking and targeting of the identified waters for TMDL development, 3) TMDL development, 4) implementation of control actions and, lastly, 5) assessment of water quality-based control actions for their effectiveness (Figure 1).

Any of several technical approaches may be used in developing a TMDL to protect water quality. A TMDL may be expressed in terms of mass per unit of time, toxicity, or other appropriate measures that relate to a state's water quality standards. EPA guidance states that it is appropriate to use the TMDL process to establish control measures for quantifiable non-chemical parameters that are preventing attainment of water quality standards, for example habitat characteristics that may cause violation of the water quality standard requiring protection of aquatic life.

C. Statement of the Problem

In accordance with Section 303 (d) of the Federal Clean Water Act, the State of Montana developed and published a list of threatened and impaired waters in 1992 The list contained more than 800 lakes and stream segments that did not meet state water

Figure 1
Development of TMDLs for Targeted Waterbodies


Identify 303(d) Targeted Waterbody
Is information adequate to determine load reductions?
Yes
No
Develop TMDL Including:
●WLAs for PS
●LAs for NPS and Background Sources
●Margin of safety
Develop TMDL Including:
Requirements:
● WLAs for PS which
+Maintain existing limits or establish new limits
● Las for NPS which
+Maintain or Implement new MPS controls (BMPs)
● Margin of Safety
Schedule for phases:
● Installation and evaluation of NPS controls
● Data collection
● Water Quality Standards Assessment
● Additional modeling if needed
Approval by EPA
Remove Waterbody from 303(d) List
Implement controls and Complete Required Data Collection
● NPDES permits for point source controls
● State or local processes for nonpoint source controls
● Additional monitoring
● Final calibration of models
Assessment of Water Quality-based Controls
Water Quality Standards Achieved

quality standards for one or more parameters. The EPA calls these waters "water quality-limited" and requires TMDLs for them. Pursuant to the federal requirements, Montana has published subsequent lists every two years since 1992. The 1996 draft 303(d) list includes nearly 900 water quality-limited water bodies. Montana also has complied with the requirement to prioritize and target these water bodies for TMDL development. Since 1992, the Montana Department of Environmental Quality (DEQ, and the Department of Health and Environmental Sciences, DHES) have initiated a number of TMDLs that address priority waters. However, only one formal TMDL has been completed and the impaired water body "de-listed." Montana clearly is not addressing its remaining water pollution problems, or the requirements of Section 303(d) and supporting federal regulations, in an efficient and timely fashion. The failure of states and EPA to implement the requirements of Section 303(d) is the subject of considerable past and present litigation [see *Overview of Past and Present Litigation Concerning Section 303(d) of the Clean Water Act (Total Maximum Daily Loads)* contained in the appendix to this report]. Montana's failure to make better progress in developing TMDLs leaves DEQ and EPA vulnerable to lawsuits.

In recent months, the Western Environmental Trade Association (WETA) and other representatives of Montana business and industry have approached the Montana Governor's Office and DEQ with concerns over national trends in TMDL litigation and outcomes, as well as the implications to land use activities within "listed" watersheds. These groups have expressed their interest in having greater involvement in the TMDL listing, prioritization and implementation process. They also have suggested the need to consider legislation, to formalize the TMDL process, explain public participation requirements and better protect their interests, while strengthening DEQ's TMDL legal authority. Public involvement in the TMDL process has been invited through legal notices since 1992 but DEQ and DHES have not actively solicited public involvement. Legislation could formalize DEQ's authority to promulgate TMDLs which has been informally challenged in the past.

Several Montana environmental organizations have recently filed a sixty-day notice of intent to sue DEQ and EPA for violation of the Clean Water Act and implementing regulations, and specifically, for having failed to develop and implement TMDLs in a timely manner.

In summary, DEQ's current approach to addressing TMDLs is slow and inefficient, not conducive to a high level of public involvement, and susceptible to legal challenges ranging from our failure to protect and improve water quality in a timely manner to our lack of clear authority in state law to develop and implement TMDLs.

D. Goals for Strengthening the TMDL Process

DEQ's mission statement is "to protect, sustain, and improve a clean and healthful environment to benefit present and future generations." The agency's guiding principles emphasize public involvement, public service and a partnership-based "bottom-up" approach to delivering environmental protection and upholding the Montana Constitution and laws. In accordance with these principles, the goals of this review are to seek ways to: 1) increase our ability to protect and improve water quality more effectively and efficiently, 2) increase opportunities for public information and participation in the TMDL process, 3) whenever possible seek ways to employ a "bottom up," stakeholder-based approach to TMDLs rather than a "top down" regulatory approach, and 4) ensure there is a sound legal basis for TMDLs, so that the program is defensible in law and less susceptible to lawsuits. The following sections of the issue paper review the current approach to TMDLs and explore opportunities to meet these stated goals.

IV. STATE AND FEDERAL REQUIREMENTS FOR CONTROLLING WATER POLLUTION

A. General Mandate

The Federal Clean Water Act (CWA) requires states to adopt water quality standards (WQS) for the protection of surface waters.

The federal act also allows states to implement a discharge permit program for the control of point source discharges to surface waters in lieu of the federal program. In order to administer a state permit program, state-issued permits must require compliance with state WQS and contain the technology-based standards (An effluent standard is a technology-based treatment requirement established by the EPA for certain categories of industrial point sources).

The CWA requires states to identify waters that fail to achieve compliance with WQS and develop management plans for controlling both point and nonpoint sources of pollution. The state's list of impaired or threatened waters and plans for correcting the impairment are the basis for the development of TMDLs. The following is a summary of the CWA's requirements for identifying problem waters and establishing TMDLs.

B. Clean Water Act Requirements for TMDLs

The CWA requires states to:

(1) Develop a waste management plan (WMP) for areas where surface waters are impaired either by point sources or nonpoint sources of pollution, including a strategy to control those sources to the extent considered feasible (Section 208).

(2) Prepare a biennial report for Congress describing the quality of the state's surface waters (Section 305(b)).

(3) (a) Identify water bodies where effluent standards are inadequate to achieve compliance with WQS

(b) prioritize the water bodies identified in the report;

(c) develop a total maximum daily load (TMDL) for problem pollutants at a level necessary to achieve compliance with WQS for each water body listed in the report;

(d) submit TMDLs to the EPA for approval; and

(e) if approved by the EPA, incorporate the TMDL in DEQ's continuing planning process (CPP) report (Section 303(d)).

The EPA's rules implementing the TMDL process require the development of waste load allocations (WLA) for point sources,

load allocations (LA) for nonpoint sources, and include a margin of safety (MOS). The rules also require states to incorporate the final TMDL in their WMPs and point source discharge (NPDES) permits (40 CFR 130.7).

C. Montana's Planning Process

DEQ's WMP, developed in accordance with Section 208, focused primarily on nonpoint sources and concluded that control of those sources would be through voluntary compliance with best management practices (BMPs) implemented at the local level by the county soil conservation districts. EPA's comments on DEQ's 1985 CPP noted that there was no plan in the draft CPP to establish TMDLs. EPA further stated that the state's nondegradation policy may "obviate the need for development of many TMDLs." In addition, since Montana's water quality-based, effluent standards were based on natural instream background conditions and state WQS, the EPA concluded that the effluent limitations may be the equivalent of a TMDL for point sources.

DEQ also prepares a biennial report on quality of the Montana's surface water, as required under Section 305(b), and submits a priority list of threatened or impaired water bodies, as required under 303(d). DEQ is required to develop TMDLs for the water bodies listed in the 303(d) report.

DEQ's authority to prepare the reports and plans required by the CWA is found in Sections 75-5-212, MCA and 75-5-213, MCA. These statutes authorize the DEQ to collect information relating to the prevention and control of water pollution and to formulate a comprehensive plan to prevent and control pollution.

D. State Authority to Require Reduced Loading of Pollutants

Section 75-5-605, MCA, of the WQA prohibits any person from violating WQS. This prohibition applies to both point and nonpoint sources. Other provisions in the Act and the rules clearly indicate that, for point source discharges to surface water, no permit may be issued if it would result in a violation of surface WQS. For example, Section 75-5-401(2), MCA, requires the Board of Environmental Review to adopt permit rules that

require compliance with WQS; ARM 17.30.1322 (1) prohibits the issuance of a permit when the conditions of the permit would not achieve compliance with rules adopted by the Board, including compliance with the state's WQS; and ARM 17.301322(7) prohibits the issuance of an MPDES permit to a new source or a new discharger if the operation would "cause or contribute" to the violation of WQS. Montana's MPDES rules further provide for conditions in a permit that may include technology-based treatment standards, water-quality based standards, and best management practices to ensure compliance with WQS (ARM 17.30.1344).

In summary, the rules prohibit the issuance of a surface water permit if the operation would violate standards. In such a situation a water-quality based effluent standard more stringent than the technology-based standard may be imposed to ensure compliance with WQS. This may be comparable to a case-by-case imposition of a TMDL. Since this approach applies only to new sources it would not meet the federal requirement to incorporate WLAs in all discharge permits on a water body that is currently not meeting WQS.

V. CURRENT APPROACH TO TMDLs IN MONTANA

A. Identification of Water Quality-Limited Waters

The water quality-based approach to pollution control begins with the identification of problem water bodies. State water quality standards form the basis and "yardstick" by which states can assess the water body status and implement needed pollution controls. State water quality standards include, designated uses for the water body and criteria (physical, chemical and biological) to protect the designated uses. States need to identify waters not meeting water quality standards. DEQ has adopted EPA guidelines for determining if designated uses are supported. These guidelines take into account the natural variability of water quality and the lack of a complete or extensive database.

The 303(d) list includes waters that do not fully meet water quality standards and those that are fully supporting their

designated uses but are threatened. When water bodies are threatened a new activity in the watershed may result in partial or non-support of one or more uses unless preventive steps are taken. EPA requires TMDLs for both threatened and impaired water bodies.

The primary database DEQ uses to compile the list of such water bodies is the Water body System (WBS). The WBS also is used to compile use-support information for the biennial Montana Water Quality Report; also known as the 305(b) report. The following Information sources are used to decide if water bodies support their designated or are threatened:

- Clean Water Act Section 208 monitoring (Montana Statewide and Area wide Water Quality Management Planning projects),
- Clean Water Act Section 319 monitoring and assessments (Nonpoint Source Pollution Control Program),
- Clean Water Act Section 314 monitoring (Clean Lakes Program),
- DEQ statewide water body assessments,
- DEQ fixed-station monitoring,
- DEQ intensive surveys and special projects,
- Data from other agencies,
- Tribal monitoring data,
- Volunteer monitoring data, and
- Data retrievals from STORET (an EPA-supported national water quality database).

The information entered into the WBS must be obtained from data meeting certain standards as defined in DEQ's Quality Assurance Program Plan for water programs, quality assurance project plans, and the annual State/EPA Agreement (SEA). The WBS does

not accommodate actual analytical data. Rather, use-support assessments are made using data from a variety of sources and the conclusions from these assessments are entered into the system.

Assessments are of two types: 1) monitored assessments are done when recent, high quality data are available, usually from fixed-station monitoring or intensive surveys, and 2) Evaluated assessments "best professional judgments," are done when site specific data are old, lacking or of marginal quality. These are done using land use information, volunteer monitoring information (minimally supervised), public complaints, models that have not been ground-truthed, and stream reach assessments.

DEQ's water body assessments evaluate the miles of streams and acres of lakes with use-support problems. Four categories of use-support are used to describe Montana's waters: 1) fully supporting, 2) threatened but fully supporting, 3) partially supporting, and 4) non-supporting. Specific definitions of each category are given in the federal guidance and in Montana 305(b) water quality assessment reports.

All waters in Montana are classified for multiple uses. Therefore, support of each designated use must be assessed. The support of each use must be determined independently of the other designated uses. For example, a water body may only partially support aquatic life uses because of habitat problems but fully support agricultural and industrial uses. The WBS also identifies the size of the threatened or impaired water body and the suspected sources and cause of the impairment. Sources of pollution are the activities that produce the pollution. Municipal and industrial wastewater discharges are examples of point sources of pollution. Agriculture, timber harvesting, and mining are common nonpoint sources of pollution. More than one source may affect a water at one time (e.g., municipal wastewater discharges and agricultural runoff may produce pollution problems in a lake). The causes of pollution are the actual pollutants or physical characteristics that cause violations of standards. Examples of causes are substances such metals and other toxins, or physical factors such as reduced riparian habitat. Often, a single source may generate several

causes of impairment. Sometimes, the impact of an upstream cause may overlap similar impacts from another source.

Most of the information in the WBS is for second order and higher intermittent and perennial streams. This subset of the state's total waters (about 64,000 miles of streams) is most likely to have stream flows sufficient to support designated uses (especially aquatic life and fisheries) and has received most of the assessment emphasis. The data now stored in DEQ's WBS represent about 17,700 miles of streams and 800,000 acres of lakes.

B. Priority Ranking and Targeting

Once waters needing additional controls have been identified, states are required to prioritize their list of waters using established ranking processes. Priority ranking is a process that is "defined by the state and may vary in complexity and design" (EPA 440/4-91-001, April 1991). The Clean Water Act states that the priority ranking for such waters must take into account the severity of the pollution and the uses to be made of such waters. According to the EPA's State Clean Water Strategy document:

> "Where all water quality problems cannot be addressed immediately, EPA and the states, using multi-year approaches, set priorities and direct efforts and resources to maximize environmental benefits by dealing with the most serious water quality problems and the most valuable and threatened resources first" (EPA, December 1988).

According to the federal guidance, targeting high priority waters for TMDL development reflects an evaluation of the relative value and benefit of water bodies within the state and take into consideration the following: 1) risk to human health and aquatic life, 2) degree of public interest and support, 3) recreational, economic, and aesthetic importance of a particular water body, 4) immediate programmatic needs such as wasteload allocations needed for permits that are coming up for revision or for new or expanding discharges, or for load allocations for needed BMP's, 5) waters and pollution problems identified during

the development of the Section 304(l) "long list" (see Section F. of this issue paper), 6) court orders and decisions relating to water quality, and 7) national policies and priorities such as those identified in the EPA's Annual Operating Guidance (EPA 440/4-91-001, April 1991).

States are required to submit their priority rankings to the EPA for review. The EPA expects all waters needing TMDLs to be ranked and those targeted for TMDL development within two years to be identified.

Montana's 305(b) report states that the process DEQ used to prioritize and target waters for TMDL development is "specifically designed to promote input from local organizations (e.g., conservation districts or environmental organizations) and industry." However, recent concerns raised by business and industry and other interests and discussed earlier in this paper indicate DEQ's public participation process for TMDLs should be strengthened.

DEQ's criteria for placing a water body in one of three TMDL development priority categories (high, moderate, low) are:

- magnitude of water quality standard noncompliance or whether the water body is an important high quality resource at an early stage of degradation;
- value of the water body;
- size of the water body not attaining standards;
- whether technology and resources are available to correct the problem;
- recommendations obtained through the public review process; and
- potential for developing a TMDL within two years.

Water bodies may be given a high priority if they are severely out of compliance with standards, are a human health risk, if

DEQ has technology and resources available to address the water quality problem with a reasonable certainty in two-years, have been nominated through public input, or if there is strong public support for the establishment and implementation of the control measures required by a TMDL.

Moderate priority water bodies are less severely degraded, have nonpoint source demonstration projects in the watershed, or developing a TMDL will require more than two years. Moderate priority includes water bodies where significant potentially polluting development is planned and controls in addition to established technology-based controls may be necessary to meet water quality standards.

Low priority includes the remaining identified water bodies. As TMDL projects are completed and other factors change, selected low priority water bodies may be upgraded to moderate or high priority and targeted for TMDL development.

After the draft 303(d) list is developed and prioritized, a 30-day public notice period follows. Announcement of the list is published in the legal notice section of the state's major newspapers' and sent to organizations that have shown interest in previous lists. DEQ published notice of availability of the 1996 list in mid-November.

C. TMDL Development

TMDLs must be established for water bodies that are threatened or are not supporting all of their designated uses ("water quality-limited" waters). EPA recognizes that, due to the number of water quality-limited waters, the states must deal with the most important or high priority waters first. The process of TMDL development consists of determining who is contributing pollutants to the water and how much each is contributing, determining the maximum amount of pollution that can be allowed without causing a violation of standards, and allocating or determining who will reduce their pollution inputs and by how much. In some cases the reductions necessary and possible are not clear. In these cases, it is possible to use a phased approach where the amount of reductions necessary are

estimated, these reduction are made, the results are measured and further reductions are made if necessary.

Many water pollution problems are area-wide phenomena caused by multiple dischargers, multiple pollutants (with potential synergistic and additive effects), or nonpoint sources. Atmospheric deposition and groundwater discharge also may result in significant pollution loadings to surface waters. Because many actions within an area may affect water quality, EPA recommends that states develop TMDLs on a watershed basis in order to most efficiently and effectively manage the quality of surface waters in the watershed.

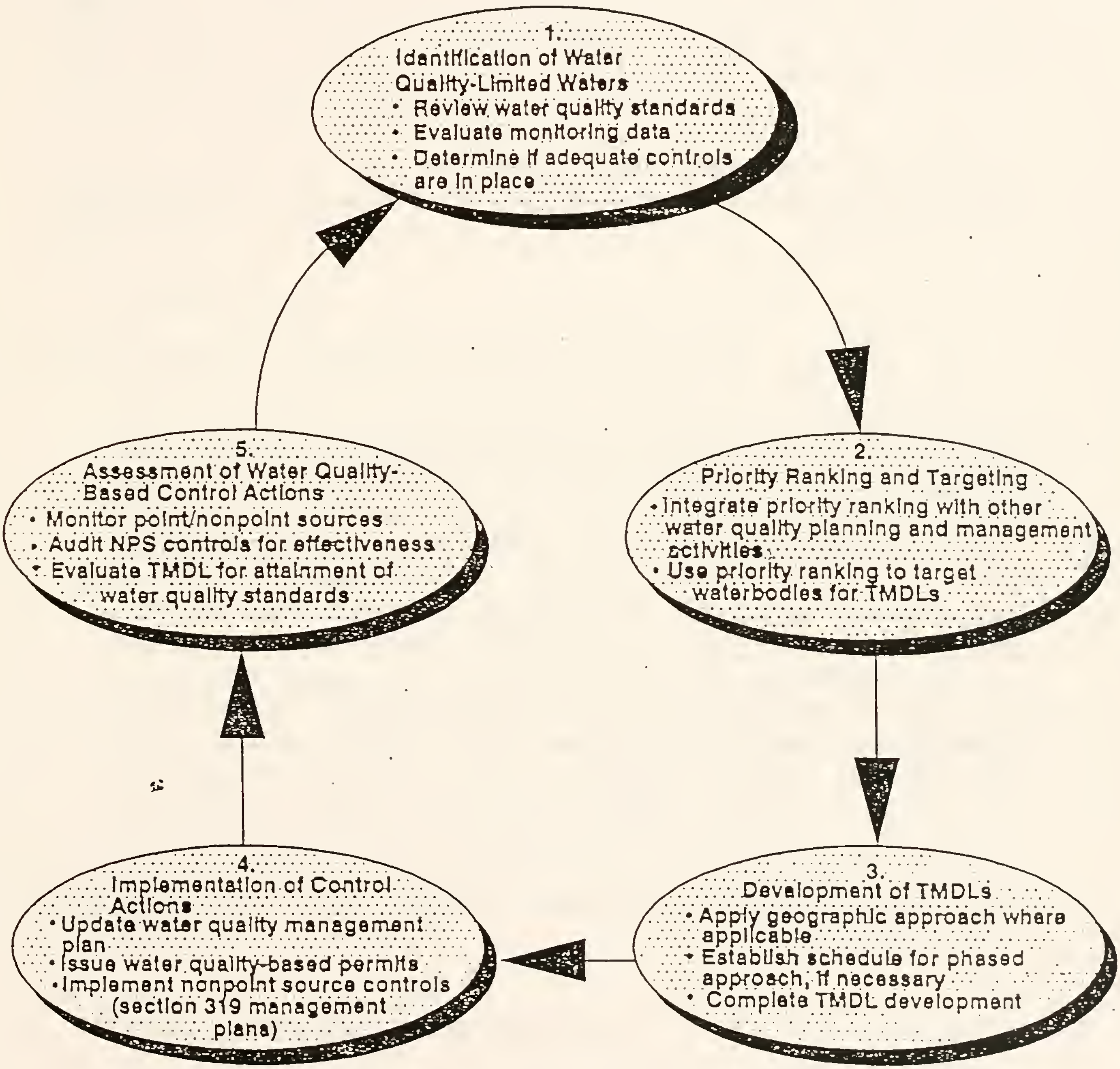
All sources of a pollutant are either explicitly assigned an allocation or implicitly included in a general allocation or margin of safety. Natural or background levels are included in the load allocation process.

One of two general approaches is used to develop a TMDL, depending on data available (Figure 2). With abundant monitoring data, a TMDL may be calculated and the appropriate WLA, LA and MOS allocated. The modeling techniques used may be simple or complex. After EPA approval and implementation of the necessary controls, a follow-up monitoring program would be developed to ensure that water quality standards are met. An alternative and more commonly used method for establishing a TMDL, especially when nonpoint sources are present, is the phased approach. In this approach, the first phase is implemented, results are assessed, and if necessary a second phase is started. Available data are used in the first iteration of WLA, LA and MOS determinations. The MOS is often large, reflecting the lack of information or the uncertainty associated with the models used. In the next iteration, additional monitoring data and Best Management Practices (BMP) evaluations are used to develop a management and control plan, refine modeling components and revise the WLA, LA and MOS as necessary.

The final control strategy and TMDL need EPA approval before implementation. Follow-up monitoring of the water body during and after implementation of TMDLs is a major component in this

Figure 1

General Elements of the Water Quality-Based Approach


1.
Identification of Water Quality-Limited Waters
• Review water quality standards
• Evaluate monitoring data
• Determine if adequate controls are in place
2.
Priority Ranking and Targeting
• Integrate priority ranking with other water quality planning and management activities
• Use priority ranking to target waterbodies for TMDLs
3.
Development of TMDLs
• Apply geographic approach where applicable
• Establish schedule for phased approach, if necessary
• Complete TMDL development
4.
Implementation of Control Actions
• Update water quality management plan
• Issue water quality-based permits
• Implement nonpoint source controls (section 319 management plans)
5.
Assessment of Water Quality-Based Control Actions
• Monitor point/nonpoint sources
• Audit NPS controls for effectiveness
• Evaluate TMDL for attainment of water quality standards

Note: TMDL development for targeted waterbodies is summarized in Figure 2

process and is necessary to determine the effectiveness of the proposed WLAs on the permitted sources and the BMPs applied to the nonpoint sources. Most of the waters on Montana's 303(d) list are listed due to nonpoint source-caused water use impairment. Because the effectiveness of pollution controls for these types of impacts are not precisely known, most of the TMDLs DEQ has initiated, or are likely to develop in the future, will use the phased approach.

A status report on TMDL development and implementation efforts in Montana is included in the introduction to DEQ's draft 1996 303(d) list.

D. Implementation

EPA guidance for the TMDL process states that:

> "Once a TMDL or a phased TMDL has been established for a water body (or watershed) and the appropriate source loads developed, implementation of control actions should proceed. The state or the EPA is responsible for implementation, the first step being to update the water quality management plan. Next, point and nonpoint source controls should be implemented to meet waste load allocations and load allocations, respectively. Various pollution allocation schemes (i.e., determination of allowable pollution among different pollution sources in the same water body) can be employed by states to optimize alternative point and nonpoint source management strategies" (EPA 440/4-91-001, April 1991).

To date, voluntary cooperation by the principal sources in a watershed has been DEQ's preferred method of TMDL implementation.

E. Assessment of TMDL Effectiveness

Monitoring is a crucial element of the TMDL process. In the assessment of water quality-based control actions monitoring provides data for an independent evaluation of whether the TMDL,

and control actions that are based on the TMDL, protect or improve the environment and are sufficient to meet changing water body protection requirements such as revised water quality standards or changing pollution sources and land uses (e.g., subdivisions).

According to EPA, the availability of baseline data should not be regarded as a prerequisite to implementing control measures for a water body. If monitoring has not yet begun, control measures and monitoring should be implemented simultaneously to ensure that pollution abatement activities are not delayed. Point source assessments are facilitated by the requirement of MPDES permittees to provide reports on compliance with permit limits.

Montana's high priority waters were selected in part because of well-documented problems (e.g., Flathead Lake, Clark Fork River, Silver Bow Creek). In some of these cases, fixed-station water quality monitoring programs remain in place and can provide data for TMDL evaluation.

VI. ISSUES

A. Legal Authority and Primacy

There is no express authority in the WQA for the department to develop TMDLs for impaired water bodies and to incorporate those limits in state-issued permits. In particular, the WQA does not authorize the department to require a reduction of pollutants from either point or nonpoint sources based on the WLAs and the LAs established through the TMDL process. Although the WQA does not contain express authority to establish TMDLs, the WQA and rules implementing that Act do allow for pollution controls that may be equivalent to a TMDL.

Most of Montana’s water quality-limited waters are impaired by a variety of nonpoint source pollution problems. There is little regulatory authority in Montana for controlling nonpoint sources other than the prohibition against violating standards contained in Section 75-5-605, MCA. Although the statute authorizing the Board to adopt rules for the issuance of permits

is broad enough to include nonpoint source discharges to surface water, the department has not requested that the board adopt such rules. As a result, the technology-based treatment standards and rules governing the issuance of surface water permits apply only to point sources. It may be possible to obtain voluntary compliance with BMPs to implement nonpoint source load allocations developed in the TMDL process, but it may be difficult for the department to enforce the BMP. Unless the Board of Environmental Review adopts specific BMPs as effluent standards for certain categories of nonpoint sources according to the requirements of Section 75-5-304, MCA or Section 75-5-305(1), MCA, there will be difficulty in enforcing any TMDL for nonpoint source discharges.

It may be necessary to amend the WQA to give the department specific authority to develop and implement TMDLs for impaired water bodies identified in the 303(d) report. As stated above, the department has authority to study areas of pollution and develop plans to abate pollution. There is no express authority, however, to develop and implement TMDLs according to the procedures established under the CWA. Although state-issued permits can be denied for impaired water bodies or modified to require a reduction in the waste load, it would be difficult to prohibit all nonpoint source activities that may occur within the basin or enforce an undefined BMP.

It has been suggested as an option that the department may turn its TMDL responsibilities over to the EPA. There is no authority under the CWA for the EPA to initiate the development of a TMDL, unless the state has submitted a TMDL that does not receive the EPA's approval. At that point, the EPA is required to develop a TMDL for the state.

If the State does not develop a TMDL, any person may initiate an action against the EPA under the citizen suit provisions of the CWA. Case law has held that a failure to develop TMDLs by a state results in a "constructive submission of no TMDL," which triggers the EPA's duty to approve or disapprove the submission. Since there is no TMDL, the EPA must disapprove the "constructive submission" and promulgate the TMDL itself. Prior to a submission of a TMDL by a state, the EPA has no duty or

authority to develop a TMDL on its own initiative. The authority to develop a TMDL is triggered by the submission and the EPA's disapproval. Presumably, states will be required to implement a TMDL developed by the EPA, although this is not clear.

Litigation concerning the TMDL process also includes challenges to the EPA's approval of the 303(d) lists developed by States, as well as challenges to the EPA's approval of the load allocations established by States in TMDLs. Generally, the remedy sought by the Plaintiff's is a schedule of compliance in which EPA is required to develop the TMDLs. In some cases, however, plaintiffs are also requesting the courts to order the EPA to withdraw its approval of state permit programs until the State develops a TMDL and further ordering the state to stop issuing permits on impaired water bodies.

In conclusion, if Montana fails to develop TMDLs as required under the CWA, a citizen suit may be initiated against the EPA under the "constructive submission of no TMDL" theory. On the other hand, citizens may also initiate a suit against the EPA for its approval of a TMDL developed by the state or for approving the list of impaired water bodies. Regardless of whether Montana proceeds with the TMDL process or takes no further action, the potential of litigation is always there.

B. Identification of Water Quality-Limited Waters

The main emphasis of the DEQ's Water body System has been tracking impaired or threatened water bodies and the sources and causes of pollution. Consequently, only a small portion of the database describes unimpaired waters. Because of the sheer size of Montana's water resources and the extremely limited monitoring and assessment capabilities available, many of the state's water bodies have not been assessed and recorded in the WBS. More than 159,000 stream miles and 33,000 lake acres are not included in DEQ's biennial water quality assessments.

Staff and funding requirements to complete statewide water body assessments and periodically reassess impaired and threatened

waters are not currently available. Estimated costs for a defensible assessment of a typical impaired stream segment about 20 miles long include: 1) chemical, physical and biological monitoring and sample analysis - $2,000; and 2) personnel to conduct stream surveys, sample collection, project coordination and liaison, data reduction and report preparation at 0.75 person day per mile - $2,800. Thus, the per mile cost of a one-time survey is about $240. The cost to revisit and confirm existing assessments for 800 lake or stream segments would be about $1.6 million for analyses and require about forty-six person years of effort at an additional cost of $2.2 million. These costs do not include the many streams and lakes which have never been monitored. Also excluded are the additional monitoring costs for pollution allocation development and follow-up monitoring to evaluate TMDL effectiveness in restoring water quality. DEQ's present ambient water quality monitoring and assessment resources total less than two full time employees with an annual operating expenses budget of less than $200,000.

A second issue involves the validity of the procedures employed by DEQ to make water use-support decisions. DEQ uses both numeric and narrative water quality standards to protect defined beneficial uses such as aquatic life, fisheries, recreation, aesthetics and drinking water supplies. While there may be competing uses in a river or stream, federal law requires DEQ to protect the most sensitive of these beneficial uses. DEQ has specified minimum quality assurance requirements for data it uses to assess degree of support of beneficial uses. Despite the best efforts to assure the reliability of the available water body assessments, some people have viewed DEQ's list of threatened and impaired waters with distrust. Most of these concerns relate to the age of some assessments, many of which were preformed more than 10 years ago. Other concerns stem from DEQ's conservative tendency to list waters if any single designated use appears to fall short of its full potential. DEQ's use-support interpretations of the available data are frequently more of an issue than the quality or reliability of the actual monitoring data.

Several additional technical issues relating to water body assessments need to be resolved. These include: 1) quality

assurance requirements for data used to make use-support determinations, 2) acceptable age and sources of data in the Water body System, 3) methods used to make conclusions based on non-traditional water quality parameters (e.g. aquatic insect community structure), 4) the need for biological water quality criteria and reference information for non-impaired streams and lakes, 5) the need for well-documented sampling and analysis protocols, 6) the issue of weight of evidence where one assessment method shows impairment and others do not, and 7) the issue of how many water quality excursions or how much degradation is allowed before an impaired rating is warranted.

C. Implications of Listing to Proposed Development Activities

DEQ is faced with having to make day-to-day decisions regarding approval or denial of wastewater discharge permits and proposed development activities, such as subdivisions, in water quality-limited watersheds. It can be argued that approval of such activities in impaired segments will make water quality worse and the State is vulnerable to legal action for these actions. Technically DEQ should evaluate requests for new discharges, increased discharges and new permits or permit renewals focusing on pollutants listed for the water body in question. Permitting or authorizing new or increased discharges of these pollutants to water quality-limited rivers and streams should only be allowed once a TMDL is completed. Unfortunately, the lengthy list of impaired waters statewide and DEQ's slow progress in implementing TMDLs makes it difficult to justify and apply such a widespread moratorium pending completion of all TMDLs.

D. Priority Ranking and Targeting

To date, the process used by DEQ to prioritize and target water bodies for TMDL development has been largely based on best professional judgement, (i.e., no matrix is developed or scoring applied to the criteria), and is not particularly well-documented. To date, the process of targeting has emphasized the availability of resources to document and address problems. The high priority water bodies have generally been those where

data exist and/or programs are in place that can help with TMDL process. The process also has not been conducted with a full complement of public review, although draft priority lists have always been made available for public comment. It is clear that DEQ needs to strengthen this critical element of the program through broader public involvement, use of a more quantitative ranking procedure and better documentation of decision rationale.

E. TMDL Development

DEQ and its predecessor, DHES, initiated few TMDLs after the 1992 303(d) priority list was published and have completed only one. DEQ's inability to develop and implement TMDLs quickly and efficiently is a major issue that will need to be addressed if the agency is to fulfill its mandate under section 303(d) and the Montana Water Quality Act.

Cost is a major factor in DEQ's ability to develop TMDLs. Defining and quantifying the causes of water quality impairment requires much more data than initially establishing that impairment exists. Minimum estimated cost is on the order of $800 per mile. The cost for a nutrient-related assessment of the Clark Fork River has been about three times this amount. This difference is due to the complexity and controversy of the Clark Fork River situation. This expenditure will probably result in a voluntary TMDL for nutrients.

The total cost for monitoring and assessment leading to the nutrient TMDL on the upper 220 miles of the Clark Fork River has been about $1.5 million, including staff time. If we assume that 40 percent of Clark Fork monitoring and assessment costs were directly related to nutrients, the cost for the nutrient TMDL is about $2,700 per mile including data collection, analysis and personnel. Other data were gathered during the process that may be sufficient for development of a TMDL for metals and other pollutants. However, the available data may have to be supplemented to do TMDLs for sediment and aquatic habitat. Metals, sediment and habitat alterations are additional causes of impairment in the Clark Fork River and TMDLs for these parameters will eventually be necessary.

The cost for DEQ's TMDL, on Deep Creek near Townsend was about $20,000 and no new data collection was necessary. Deep Creek is about 26 miles long. The water quality impairment is due to excessive sediment and habitat loss, and the consequent loss of fish spawning, rearing and passage. Thus, this TMDL cost about $800 per mile not including prior data collection. The Deep Creek TMDL may be representative of many future TMDLs that will focus on sediment and habitat problems caused by nonpoint sources. However, unlike the Deep Creek situation, sufficient data for TMDL development does not exist for most of Montana's impaired water bodies. Based on estimated monitoring, analysis and personnel costs and experience with the Clark Fork and Deep Creek TMDLs, it is estimated that TMDL development costs will range somewhere between $800 and $2,700 per stream mile. Estimated costs for lake TMDLs are not yet available pending completion of a TMDL currently being developed for Flathead Lake. These cost estimates are very rough due to DEQ's limited experience in developing TMDLs. A survey of 14 TMDLs by EPA presented costs and the area of the watershed. These costs, per square mile of watershed, ranged from $52 to $5459 for streams, and from $101 to $489 for lakes (EPA-R-96-001 May 1996). Limited earmarked funding is currently available to DEQ for the specific purpose of developing TMDLs. A total of approximately one full time position is available to DEQ for TMDLs and one position contributing to this total is currently vacant.

DEQ's MPDES program has been used to partially develop and implement TMDLs. Each MPDES permit examines a stream segment that could be affected by the local point source dischargers and assigns effluent limits that will ensure compliance with Water Quality Standards. Thus, wasteload allocations are made to point sources in their permits. Recently, language has been added to the permits to clarify that wasteload allocations are developed for each MPDES permit.

This process may be unfair to dischargers in some cases because any contribution to a water bodies's pollutant load that comes from nonpoint sources is taken to be natural. In reality, effective Best Management Practices should be required of the nonpoint sources before any pollutants emitted by them are accepted as natural. After BMPs are applied to nonpoint sources,

the load allocation would be minimized leaving the rest of the TMDL to be allocated to the point sources, natural sources, and the margin of safety.

As has been previously stated, most identified water quality impairment in Montana results from a variety of nonpoint sources and alterations of aquatic habitat, including stream channelization, loss of riparian vegetation and streamflow depletions, to name a few. The single greatest challenge facing DEQ with regard to its TMDL responsibilities is the need to develop an efficient process to restore and protect water quality affected by nonpoint sources and habitat-related problems. Due to its very nature, control of nonpoint source pollution problems is a complex process and not conducive to quick fixes. Mixed land ownerships, multiple land use activities, large geographic areas and multiple sources and causes of pollution create a major impediment to developing and implementing effective and timely TMDLs.

TMDLs have not been formally adopted into the nonpoint source management activities of DEQ except for the recent Deep Creek watershed project in Broadwater County. However, the principles of TMDL development and implementation have been applied informally for as long as nonpoint source control efforts have been going on. For example, the nonpoint source management activities, especially funding of projects through Clean Water Act Section 319, have been targeted toward impaired waters on the 303 (d) list. Funding for nonpoint source controls, can be used for water bodies even if they are not officially on the list.

The nonpoint source watershed projects usually involve a site visit with concerned watershed residents and an evaluation of monitoring data that may include habitat assessments, aquatic insect studies, fish surveys by Montana Department of Fish, Wildlife and Parks, and physical stream channel measurements and observations. Once water quality problems are identified, DEQ encourages the development of a plan to implement best management practices. By the time this has occurred, a more formalized advisory group often has evolved, composed of local conservation district members, Natural Resource Conservation

Service advisors, and other agency staff and land owners. If the project wishes to receive grant funding from DEQ the watershed advisory groups develop and submit proposals with specific goals, objectives, and tasks. DEQ grant projects must have an information and education component, an evaluation component, and a significant amount of local interest. The watershed projects also generally include implementation monitoring and BMP assessment to determine if water quality goals are being met by the funded management measures.

Guidance issued in 1996 by Region 8 of the EPA, outlined an approach for the state to gain approval of past and future nonpoint source projects as official TMDLs. The guidance contained specific language to go into letters to the EPA for approval and outlined eight criteria or requirements that must be met for approval (Appendix C).

The Deep Creek watershed project represents a fairly typical nonpoint source management project and one which the EPA has approved as a nonpoint source TMDL. This indicates that many more of Montana's ongoing nonpoint source management projects may qualify for TMDL designation and suggests that the DEQ has been achieving substantial TMDL gains. The Deep Creek project involves a team of several agency representatives, landowners, and consultants that have worked together to prepare a watershed management plan with discrete goals and objectives for water quality and human and aquatic life uses. The team established fishery health indicators, sediment loading objectives, and measurable levels of BMP implementation. An additional component, not currently part of the formal TMDL process, is an information plan to promote the successful features of the project to other landowners and agency staff. Like most other DEQ watershed projects, the focus is on control of agricultural nonpoint source pollution -- the state’s primary nonpoint pollution source category.

The above formula for an effective NPS project is best applied to small watersheds. In smaller watersheds, it is easier to develop local interest and support to form the nucleus of a watershed management team. The strongest advocates for water body restoration seem to be those most intimately familiar with

the water body. This locally sponsored management group is critical to developing acceptance of new and innovative BMPs. It is also important in developing funding proposals and landowner support for activities that have little immediate financial benefit to the land owner. The DEQ's nonpoint source management funds have been applied to larger watershed projects such as the Blackfoot Challenge and the Clark Fork-Pend Oreille Basin nutrient management plan but DEQ funding has been directed toward staff support for coordination of activities. The coordinator hired by DEQ for the Clark Fork-Pend Oreille Basin nutrient management plan has been directly involved in a nutrient TMDL. The coordinator in the Blackfoot Challenge has helped with nonpoint source management in smaller watershed projects similar to the Deep Creek model.

F. TMDL Implementation

Federal guidance suggests it is up to states to determine allocation schemes and timetables for TMDL implementation. However, neither Section 303(d) of the Clean Water Act nor EPA guidance for the TMDL process provides states with a clear mandate regarding TMDL implementation. Recent TMDL case law establishes that states must show reasonable progress in implementing TMDLs and be able to demonstrate that TMDLs have been completed and waters de-listed (comments by Becky Watson, attorney, at WETA TMDL workshop, November 21, 1996). The issue of whether "functional equivalents" to TMDLs are acceptable implementation strategies has been debated in the courts but not resolved.

The cost of TMDL implementation obviously will vary. Most of these costs will be borne by the private and public entities responsible for the impairment. There will be significant costs to DEQ. These costs may include BMP development and/or adoption, public information, and coordination and oversight. Some factors that will determine these costs are the size of the water bodies, the cause of impairment, the degree of impairment, and required remedial measures needed to correct the impairment. Insufficient data are available to predict the costs of implementation.

G. Monitoring TMDL Effectiveness

The monitoring feedback loop is a critical component of TMDLs, especially for those using a phased approach. The lack of funds to support statewide water quality monitoring is an important issue that prevents DEQ from doing a good job identifying impaired or threatened water bodies, documenting pollution sources and causes, developing pollution allocations, and evaluating TMDL effectiveness.

Monitoring TMDL effectiveness in restoring and protecting water quality is often more expensive than initial water body assessments because additional monitoring is needed to confirm that corrective measures have actually been put in place (implementation monitoring) and that they are accomplishing the desired water quality result (effectiveness monitoring). Costs may exceed $300 per mile per year. The total costs will be determined by the number of TMDLs started and the time necessary for implementing each TMDL. However, DEQ does not have to bear all costs for monitoring TMDL implementation and effectiveness. In some instances, permits may require dischargers to assess the impacts of their discharge on the receiving water (e.g., Stone Container Corporation, Missoula WWTP, etc.). A monitoring requirement can be put into an MPDES permit as a special condition if the information is collected for purposes of writing a permit limit.

EPA encourages states to use innovative monitoring programs, such as cooperative monitoring and citizen volunteer monitoring, to provide adequate point and nonpoint source monitoring coverage. DEQ currently is pursuing a jointly-financed public/private monitoring project in the Clark Fork-Pend Oreille watershed and is establishing a foundation for a statewide citizen volunteer monitoring training program. Another source of monitoring information is DEQ's nonpoint source pollution control program. All state-supported nonpoint source control projects throughout the state have accompanying monitoring projects to evaluate their effectiveness. Most of these projects have been implemented because of recognized impairment and 303(d) listing and most are on DEQ's moderate priority TMDL list.

There may be possibilities to reallocate various DEQ funding sources toward concerted monitoring efforts in priority watersheds. A watershed approach to water quality management would enhance the DEQ's ability to make the best use of scarce monitoring dollars by directing various program resources toward common geographic areas and management goals.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. Legal Authority and Primacy

Following are some alternatives that may be available to DEQ regarding legal authority to develop and implement water quality-based management approaches. This is not intended to be an exhaustive list.

Alternative No. 1 - No Action Alternative: One option would be to simply do nothing. In the event of State inaction, EPA would be responsible for listing impaired water bodies and developing TMDLs either on its own initiative or by court order. DEQ would be required to implement the TMDLs developed by EPA through DEQ's permit and nonpoint source programs. The problem with this option is relinquishing control of Montana's water quality programs to EPA or a judge. For this reason we do not recommend this option.

Alternative No. 2 - Improving the Present Voluntary Program: DEQ has authority to implement the "functional equivalent" of a TMDL through its point source discharge permits. DEQ's permitting authority, however, has never been extended to include nonpoint sources, which are a major source of pollutants in Montana. Although DEQ has authority to enforce violations of the water quality standards against nonpoint sources, the technical difficulty of determining which landowner is responsible for violations caused by diffuse runoff makes litigation a burdensome and time consuming task. As a result, DEQ uses a voluntary program for reducing nonpoint source pollution. The problems encountered with choosing a voluntary program are: (1) a shortage of funding for (a) monitoring, (b) nonpoint source information programs, (c) incentives for BMP

implementation, and (d) staff to assist local efforts; (2) lack of a well defined process; and (3) potential challenges to DEQ's authority to implement and enforce TMDLs. Without the necessary funding and cooperation from a majority of landowners within a watershed a voluntary program could not succeed.

This option is simply to improve the voluntary program. This could be accomplished by legislation authorizing DEQ to develop TMDLs for all sources, but leaving implementation for nonpoint sources as a voluntary program. This option would avoid any need for challenges to DEQ's authority to implement and enforce TMDLs for point sources and, arguably, enhance the effectiveness of the voluntary program for nonpoint sources by providing additional funding. Without cooperation from nonpoint sources, however, compliance with water quality standards may never occur. Informing landowners is considered to be the key to achieving strong public interest and cooperation in controlling nonpoint source pollution. Over the past five years, agriculture and the forest products industry been made significant strides in taking a comprehensive watershed approach to nonpoint pollution. During this brief period, scores of watershed associations have been set up in agricultural areas to implement BMPs and hundreds of small watershed analyses have been done by the USFS to determine environmental impacts and restoration goals on a watershed basis. What has been missing, and is needed in an improved voluntary nonpoint program is resources to achieve a systematic approach to addressing water quality-limited waters.

Alternative No. 3 - Legislation and Rule-making Authority: Rather than reliance on voluntary programs for nonpoint sources, another option would be to enact legislation authorizing DEQ to develop and implement TMDLs for both point and nonpoint sources. The legislation would include rule-making authority for the Board of Environmental Review to adopt BMPs for nonpoint sources that would ensure the attainment of water quality standards. Like Option No. 2, this option would provide clear authority for DEQ to develop TMDLs. This option would also have a regulatory mechanism for enforcing compliance with BMPs for all nonpoint sources. This would alleviate the problems associated with enforcing water quality standards violations against nonpoint

sources by simply requiring compliance with BMPs. This approach might result in a more effective method of ensuring water quality improvements rather than the current practice of relying on voluntary efforts. However, this alternative ignores the technical feasibility of demonstrating compliance through sampling procedures which in some cases are still developmental, such as biomonitoring and habitat assessment procedures. This approach also could jeopardize the cooperative approach which has developed, and is continuing to develop, regarding nonpoint source pollution management in the agricultural community.

Alternative No. 4 - Combination Approach:
This option would combine parts of alternatives 2 and 3. It would include clarifying DEQ's authority and responsibility to develop TMDLs through legislation and would include a program to encourage voluntary compliance by nonpoint sources. DEQ's regulatory authority would be used only when voluntary programs do not result in compliance with water quality standards.

B. TMDL Program Framework and Public Participation

It seems evident that a successful program of restoring water quality in Montana's many impaired lakes and stream segments will require a coordinated statewide approach which involves the public and all stakeholders and which focuses a variety of available resources on common environmental goals in specific geographical areas. This concept is not new and is being successfully applied in many states. The framework is known as the watershed or statewide basin management approach. DEQ has explored this approach during its recent organizational efforts and is considering its benefits to the TMDL and other programs.

Briefly, the goal of the statewide basin management approach is to provide a better basis for coordinating the activities of environmental programs and other resource management partners, including the local public. The primary features of the program framework are: geographic focus, stakeholder (affected citizens) involvement, specific environmental management objectives, integrated solutions, and a broader base of resource protection options. The framework is composed of nine elements and five

major management steps that facilitate improved effectiveness and efficiency in delivering environmental management service to local communities. The approach also can improve the state's ability to manage statewide resources. DEQ sponsored a workshop on this approach in late 1995. A description of the statewide basin management approach and some of the findings of the DEQ workshop are attached as an appendix to this briefing paper (Appendix D.).

DEQ could adopt at least some elements of the watershed approach as it moves to strengthen its approach to TMDLs. The watershed approach provides an excellent framework for involving the public and various interest groups in monitoring and data assessment, prioritizing and targeting waters for TMDLs, and the development and implementation of management plans. A rotating basin approach is commonly used as a framework, which allows states to focus available resources on manageable subsections rather than the entire state. The five steps in the management process -- monitoring, assessment and prioritization, development of management strategies, management plan review and approval, and implementation -- are staggered so that states are concurrently performing different elements of the process in different watersheds, e.g. monitoring in one basin, assessment in another, plan development in another.

There are sixteen major drainage basins in Montana. If DEQ adopted this approach in two basins per year, it would take eight years to initiate the first step of the process (monitoring) in all basins and twelve years to complete one cycle. Funding requirements of this approach are described in the last section of this paper.

C. Identification/Confirmation of Impaired Waters

It seems clear that DEQ's water body monitoring and assessment capabilities will need to be substantially enhanced if it is to address the existing deficiencies. It also is apparent that DEQ needs to do a better job of informing Montanans about its beneficial use assessment approach and look for ways of arriving at a more broadly accepted data evaluation procedure.

D. Interim Measures for Impaired Waters

It is clear that DEQ needs to develop policy guidance for proposed development activities that may affect water quality-limited water bodies.

E. Prioritization and Targeting

As public interest in the TMDL process has increased, it has become apparent that DEQ needs to rethink the process it uses to rank and target waters for TMDLs. The process should generally be redesigned to accommodate greater public and stakeholder participation and use a more quantitative ranking process, expanding on DEQ's present guidelines.

F. Process for Developing Nonpoint Source TMDLs

With some standardization and work by DEQ on local and public acceptance, TMDLs could achieve wider application in the agricultural setting. Clearly, a simplified process is needed for nonpoint source TMDLs. DEQ in March 1996 prepared a draft policy for nonpoint source TMDL development (Appendix B.). These guidelines were circulated informally to members of the Forest Practices Cumulative Effects Work Group but were never formally adopted. The U.S. Forest Service has referred to various components of the guidance in its environmental assessments of proposed forest district activities in drainages containing a water quality limited water body. However, not all districts and forests interpret them in the same way.

The draft DEQ guidance outlines the minimum requirements for compliance, recommends that a watershed approach be taken to implement NPS controls, and suggests a scale at which these non-traditional TMDLs should be established (8 digit USGS hydrologic unit code). This non-traditional TMDL guidance is proposed for small groups of nonpoint sources which are to be addressed with BMPs. The traditional (pounds-of-pollutant loading) TMDL would be used in larger watersheds with a greater number of sources and a mixture of point and nonpoint sources, according to the guidance paper.

Five steps comprise the basic components of the draft DEQ nonpoint source TMDL guidance;

- identify specific water quality goals to be achieved including such things as channel stability or aquatic life use support,
- develop a BMP implementation plan to meet the water quality and use-support goals,
- develop a monitoring plan to check progress,
- implement the BMP plan and monitor appropriate indicators of effectiveness, and
- evaluate monitoring results and modify the plan if necessary.

The guidance also recommends that consideration be given to cumulative effects on the small watershed from activities outside the area of planned BMPs. According to the guidance document, public involvement should be provided and effects of new activities in the watershed must not degrade existing high quality water in accordance with the Montana nondegradation rules. A number of issues would need to be resolved in order to apply this draft DEQ approach broadly and consistently toward restoration of water quality in Montana's many nonpoint-impaired water bodies. These issues include: how to prioritize nonpoint source-impaired water bodies for remedial attention, what type of TMDL is best suited to a particular land use, how to evaluate effectiveness in restoring water quality, how to maintain TMDL effectiveness over time and, lastly, whether DEQ's current voluntary nonpoint source control approach can guarantee water quality results.

Nonpoint sources do not lend themselves to regulatory programs in the conventional sense of the word. This is because there is usually no specific process, pipe, or technology in place to allow specific measurement or calculation of the discharge or any sort of feedback-oriented wastewater treatment. Nonpoint source pollutant loading can be effectively measured only during a rain storm or snow melt event. The best way to manage nonpoint source pollution is to manage land use activities that cause it. Though some degradation of water quality can be naturally induced, nonpoint source pollution usually is caused by some over-use of the land (over-harvesting of timber, over-grazing, over-development, over-irrigation). Nonpoint source pollution also may be caused by the destruction or loss of natural habitat or stream "infrastructure" (e.g. filling of floodplains, loss of riparian vegetation, or wetland destruction).

Because land use is the key to understanding and controlling nonpoint source pollution, an inventory of existing practices and land uses is an important first step in controlling it. Strategies for solving nonpoint source problems are also going to be very site specific. For this reason, mandating specific BMPs through regulations or permits could be counter-productive. Also, to garner knowledge of water quality problems and their relationship to land use practices, it is important to gather information throughout the watershed, in particular on private property, and to take advantage of the local landowner knowledge base. This information can only be gathered on a cooperative basis. Landowner support also is important for setting up an effective sampling program to check the progress of watershed projects. Access to private land is usually necessary to check progress of BMP installation, measure localized water quality improvements, and take biologic or stormwater samples that are representative of local land management activities.

Experience from all over the country has taught us that watershed management takes local involvement, education, cooperative technical assistance, and a long term commitment of time and energy to be effective. At least a year of routine meetings often are necessary to develop an understanding of the ecological and cultural factors affecting the water resources.

A cooperative approach, and a certain level of trust between watershed advisory committee members is usually necessary to get a watershed project up and running. Watershed management of land use is not something you complete and then walk away from. TMDLs established for nonpoint source pollution control should include a long-term commitment to participation, funding assistance, and help with implementation of BMPs.

G. Implementing a TMDL Program - Coordination with other Watershed Management Programs in Montana

The following is a partial list of major public and private watershed management organizations and activities in Montana with which a TMDL effort should coordinate and interact:

USDA - Environmental Quality Incentives Program - EQIP
Conservation Reserve Program - CRP
USFS - Watershed analyses on salvage and normal harvesting activities in the national forests
DEQ - 319 Projects - EPA - Clean Water Act authorized funding for NPS management
Wetlands grants for education, planning, and restoration.
DNRC - Environmental restoration, watershed management, and habitat restoration projects controlling NPS from mined areas and agricultural lands.
Forest management plans on private and state lands.
FWP - Habitat restoration projects using fisheries funds.
Flathead Basin Commission - state supported multi-agency and private stakeholder effort to protect Flathead Lake and contributing watershed.
Upper Clark Fork River Basin Steering Committee - Private/public partnership implementing a water management plan in the portion of the river above Milltown Dam.
Tristate Implementation Council - broad-based stakeholders council working to protect and restore Pend Oreille Lake, the Clark Fork (and its tributaries), and Pend Oreille River in NE Washington.
Montana Association of Conservation Districts - watershed management Capacity Building Project

310 Law implementation - Natural Streambed and Land Preservation Act

Montana Watershed Coordination Council - Provides a forum for coordination, information exchange, and policy development on watershed management activities.

The Montana Watershed Coordination Council (MWCC) was established to provide a means to coordinate many of these activities and programs across the state. The Water Activities Work Group of this council helps to select projects for the 319 NPS program. The group has representatives from the various state, local, and federal agencies involved in watershed management and representatives from industry, academic institutions (MSU and UM), and conservation groups. TMDLs should be integrated with many of the above programs and achieve acceptance by the organizations represented by the Montana Watershed Coordination Council to help assure that they are effectively implemented.

H. Program Funding

Idaho has about 900 impaired water bodies. This estimate is based on the assumption that Montana has 800 impaired water bodies. Idaho has estimated that a five-year program to develop their TMDLs will cost about $1,000,000 per year so the following estimate for Montana may be high. In practice there is much uncertainty in setting up a program of this size. The following funding recommendations are based on completing TMDLs for two of Montana's sixteen basins each year after start-up. Start-up will require one year.

This undertaking will require the following staff: one administrator, six people for monitoring, and three people for technical work (this will include one monitoring expert, one modeler, one data management/Geographic Information System specialist), and eight liaison/watershed coordinators. All of these staff members would be hired as soon as possible and start working with available data. This work would include assembling and assessing existing data, reassessing purportedly impaired water bodies whose impairment is obviously in doubt, and developing watershed steering committees.

The cost for these personnel is estimated to be $50,000 each per year. This estimate includes office space, equipment, travel and other miscellaneous expenses, salary, indirect and overhead costs. These costs for eighteen people total $900,000 per year. In addition, it is estimated that analytical work (aquatic insects, algae, chemistry,) information, tours, meetings etc., will cost an additional $300,000 per year. Thus, the total yearly cost of this program is estimated at $1,200,000. Due to the start-up problems with a program of this size it is estimated that the cost for the first year will be one-half of this, or $600,000. The **estimated** total cost for a twelve year program to get TMDLs done for the entire state is thus $10.2 million. This cost estimate include only the water bodies now known to be impaired and does not include any consideration of the costs of implementation or of monitoring to assess implementation effectiveness.

VIII. APPENDICES

A. Overview of Past and Present TMDL Litigation

B. DEQ Draft Guidance for Nonpoint Source Activities in Water Quality-Limited Water bodies

C. EPA Guidance for Nonpoint Source TMDLs

D. Montana Watershed Approach Workshop Proceedings

APPENDIX A.

Overview of Past
and Present
TMDL Litigation

TMDL LITIGATION

STATES WITH RESPECT TO WHICH EPA IS CURRENTLY UNDER COURT ORDER TO ESTABLISH TMDLS

Oregon -- 1986 consent decree
Alaska -- 1992 court order
Georgia -- 1996 court order

STATES WITH RESPECT TO WHICH PLAINTIFFS HAVE FILED LITIGATION SEEKING TO COMPEL §303(D) LISTS AND/OR TMDLS

Idaho: court has ordered EPA to submit a schedule by 3/97 for establishing TMDLs (no order for EPA to establish TMDLs)
Georgia: parties negotiating consent decree/settlement agreement on listing issues
New York
New Jersey
Pennsylvania
Delaware
West Virginia
Louisiana
New Mexico
Kansas
North Coast, California
Newport Bay, California
Washington
Oregon

STATES WITH RESPECT TO WHICH NOTICES OF INTENT TO SUE HAVE BEEN FILED

Alabama (2 notices)
Florida
Mississippi
North Carolina
Wyoming
Arizona (mercury arising out of lawsuit to compel water quality standards for mercury)

12/2/96

OVERVIEW OF TMDL CASES

I. TMDL CASES WITH COURT DECISIONS OR CONSENT DECREES

A. Scott v. City of Hammond, 741 F.2d 992, 996 (7th Cir. 1984), cert. denied, 469 U.S. 1196 (1985) -- Lake Michigan

Plaintiffs alleged that EPA had a mandatory duty under section 303(d) to promulgate TMDLs for Lake Michigan if the states failed to do so. In this case, the states had not identified any water quality limited segments or established any TMDLs for Lake Michigan. That fact, coupled with EPA's admission that no TMDL submissions had been made, in the Court's view "raise[d] the possibility that the states ha[d] determined that TMDLs for Lake Michigan [were] unnecessary." The Court of Appeals remanded the case to the District Court for a finding whether the states had "refused" to act. "[S]tate inaction amounting to a refusal to act" would be interpreted as a constructive submission of no TMDL, thus triggering EPA's duty to approve or disapprove such submission and to promulgate the TMDL itself (in the event of a disapproval).

On remand, Illinois, Indiana and Michigan submitted determinations that TMDLs were unnecessary for Lake Michigan; Wisconsin identified four areas for TMDL development. EPA approved the state determinations in 1985. In a subsequent case (National Wildlife Federation v. Adamkus, 1991 U.S. Dist. LEXIS 4037 (N.D. Ill. Mar. 27, 1991)) plaintiffs contended that insufficient TMDL activity by states bordering Lake Michigan constituted a constructive submission of no TMDLs and that EPA was required to approve or disapprove the submission. The court rejected the plaintiffs' contention because the Lake Michigan states had made actual submissions in 1985 which EPA approved, thus precluding a finding of constructive submission.

B. Northwest Environmental Defense Center, et al. v. EPA, No. 86-1578 (D.Ore.) -- Oregon

Plaintiffs brought this mandatory duty suit in 1986 on a constructive submission theory. Oregon had done little, if anything, to implement the requirements of section 303(d). Accordingly, EPA entered into a consent decree with plaintiffs that addresses EPA obligations under section 303(d) in the event the State of Oregon does not carry them out. In 1994, the same plaintiffs filed a new lawsuit alleging that Oregon had constructively submitted no 1994 section 303(d) lists, thereby triggering a duty by EPA to establish such lists. EPA entered into a consent decree to act on Oregon's 1996 list submissions by May 1996. EPA satisfied that decree. In September 1996, the same plaintiffs filed a new lawsuit discussed below.

C. Alaska Center for the Environment v. Reilly, 762 F. Supp. 1422, 1426-29 (W.D. Wash. 1991) upheld on appeal 20 F.3d 981 (9th Cir. 1994) -- **Alaska**

In this case, all parties agreed that no TMDL had ever been submitted to EPA for Alaska. Moreover, the court found that the State of Alaska had not completed "even the first stage of the TMDL process." The court noted that although the State's 1988 305(b) report identified several hundred water bodies as impaired or threatened by water pollution, Alaska had identified only one water quality-limited segment prior to the litigation and had submitted to EPA a list of 48 segments after the litigation commenced. The court also concluded from the evidence that the State had not attempted to develop a TMDL and had never indicated any intent to do so in the future. Looking at both past activities and future intent, the court found that Alaska had constructively submitted no TMDLs and therefore ordered EPA to initiate its own process of establishing TMDLs, including any and all necessary steps to effectively identify the appropriate water bodies at issue.

D. Northwest Environmental Defense Center, et al. v. EPA, No. C91-427R (W.D. Wash.) -- **Washington**

This mandatory duty suit was brought in 1991 by the same plaintiffs that commenced the 1986 Oregon 303(d) lawsuit. Like that suit, the plaintiffs alleged that State inaction amounted to a constructive submission of no TMDLs or lists. EPA entered into a consent decree in 1992 that required EPA to negotiate with the State of Washington a five-year plan for implementation of section 303(d) in the State, but the court retained jurisdiction. On December 7, 1994, these plaintiffs, dissatisfied with progress under the decree, amended their complaint (see discussion below).

E. Sierra Club v. Browner, 843 F. Supp. 1304, 1314 (D. Minn. 1993) -- **Minnesota**

Invoking the theory of "constructive submission," plaintiffs in this case alleged that EPA had a mandatory duty to establish a list of water quality-limited segments and accompanying TMDLs for Minnesota waters. The court found that the State had submitted several lists of waters to EPA and, although EPA disapproved these lists and promulgated its own list, refused to apply the constructive submission theory to these facts. The court also noted that the State was working on a TMDL for a 330-mile stretch of the Minnesota River, as well as TMDLs for five other water quality-limited segments, with schedules and dates ranging from July 1993 to December 2002. The court also noted that EPA had approved schedules for two more TMDLs. In concluding that Minnesota's TMDL activities precluded a finding of constructive submission, the court also noted that EPA had approved 43 TMDLs/wasteload allocations submitted by the

State (which were in the form of water quality-based effluent limits in NPDES permits). The court dismissed the case.

F. Dioxin/Organochlorine Center, et al. v. Rasmussen, (57 F.3d 1517 (9th Cir. 1995) -- **Columbia River TMDL (WA, OR, ID)**

In this case, environmental and industry plaintiffs challenged the adequacy and reasonableness of the TMDL for dioxin promulgated by EPA for the Columbia River. The District Court upheld the TMDL and concluded, among other things, that a TMDL need not set wasteload allocations for all point sources and load allocations for all nonpoint sources, provided that all discharges of a pollutant are considered. The Court of Appeals affirmed, upholding EPA's TMDL for dioxin as sufficiently protective of subsistence fishers.

G. Idaho Sportsmen's Coalition, et al. v. Browner, No. C93-943, W.D. Wash. -- **Idaho** (ongoing litigation)

In the first part of their lawsuit, plaintiffs successfully challenged as arbitrary and capricious EPA's approval of a list of 36 water quality-limited segments submitted by the State of Idaho. The court concluded, among other things, that the list improperly omitted waters identified as impaired in the State's 1992 305(b) report and failed to consider information available from the U.S. Forest Service. The court then directed EPA to establish its own list, which EPA did on October 7, 1994.

In the second part of this lawsuit, plaintiffs alleged that Idaho had constructively submitted no TMDLs, thereby triggering EPA's mandatory duty to promulgate TMDLs. On May 19, 1995, the Court ruled that Idaho's submission of two TMDLs, coupled with its progress in developing TMDLs in 29 listed segments and other pollution control strategies, was sufficient to defeat plaintiffs' constructive submission claim, although the court noted that it was a "close question." The court went on to find, however, that EPA had violated a "duty" under the statute and the TMDL regulations -- and had acted arbitrarily and capriciously -- in failing to develop, with Idaho, a reasonable schedule for the development of TMDLs for all listed WQLSs. (There are presently 962 waters on the list.) The court then directed EPA to file such a schedule by May 19, 1996, which EPA did. On September 26, 1996, the court rejected the schedule submitted by EPA and remanded to EPA with instructions to submit a new schedule within six months.

H. Sierra Club, et al. v. Hankinson, No. 1 94-CV-2501-MHS (N.D. Ga.) -- **Georgia**

In this case, plaintiffs asserted that Georgia's failure to submit TMDLs over a long period of time amounted to a constructive submission of no TMDLs, thus triggering EPA's duty to establish TMDLs for Georgia. The court, in an order dated March 25, 1996, held that the constructive submission theory was

not appropriate in this case "because Gerogia has made some TMDL submissions, albeit totally inadequate." However, the court also found that "EPA's failure to disapprove of Georgia's inadequate TMDL submissions was arbitrary and capricious in violation of the Administrative Procedure Act and that EPA's failure to promulgate TMDLs for Georgia violates the Clean Water Act."

On August 30, 1996, the court issued an order directing EPA to establish TMDLs for all listed waters within five years — and to ensure that TMDLs are implemented through the NPDES permitting program which the state, not EPA, administers. EPA filed a notice of appeal on November 4, 1996.

I. Natural Resources Defense Council, et al. v. Fox, No. 94 Civ. 8424 (S.D.N.Y.) -- **New York** (ongoing litigation)

In this case (filed November 1994), the plaintiffs seek an order directing EPA to establish a list of water quality-limited segments for the State of New York as well as TMDLs for those waters. The expressed intent of this complaint, however, is to protect the drinking water supply for New York City through the development of TMDLs for New York City's drinking water reservoirs and tributaries, and the plaintiffs accordingly ask the court to direct EPA to assign a high priority to the protection of those water segments. Both parties moved for summary judgment which the court denied in December 1995. The court found that a trial was needed to determine whether the state had made TMDL submissions.

II. ONGOING TMDL LITIGATION -- NOT BRIEFED

A. Northwest Environmental Advocates, et al. v. Browner, No. 91-427R (W.D. Wash.) -- **Washington**

In this amended complaint (filed November 1994), the plaintiffs ask the court, among other things, to order EPA to develop a schedule for the establishment of TMDLs for all water quality-limited segments in Washington. They also seek an order directing EPA to disapprove the State's section 303(e) continuing planning process (CPP) because of the alleged section 303(d) violations and, on that basis, to "disapprove" the State's NPDES permit program and to prohibit the issuance or renewal of any new or existing NPDES permit that "would allow for additional discharge of pollutants into the navigable waters of the State of Washington."

B. Ohio Valley Environmental Coalition, Inc., et al. v Carol Browner, et al., No. 2:95-0529 (S.D.W.VA.) -- **West Virginia**

In this case (filed July 1995), plaintiffs are asking the court to direct EPA to establish section 303(d) lists and

TMDLs for West Virginia. Plaintiffs are also seeking an injunction establishing an expeditious schedule for EPA compliance with these duties and ensuring that either West Virginia or EPA undertake monitoring to determine the full set of West Virginia's "water quality limited" waters.

C. Kansas Natural Resources Council, Inc., et al. v. Browner, No. 95-2490-JWL (D. Kansas) -- **Kansas**

In this case (filed October 1995), in addition to seeking an order directing EPA to disapprove Kansas' section 303(d) list and to establish lists and TMDLs for Kansas, plaintiffs ask the court to order EPA to withdraw its approval of Kansas' NPDES permit program, to stop making permit-related grants to Kansas, and to refrain from issuing or renewing NPDES permits for Kansas until EPA has approved an adequate continuing planning process for Kansas.

D. Pacific Coast Federation of Fishermen's Associations, et al. V. Marcus, et al., No. 95-4474 MHP (N.D. Calif.) --**California (North Coast)**

In this case (filed December 1995), plaintiffs seek an order directing EPA to establish a priority schedule for establishing TMDLs for 17 waterbodies in the North Coast of California and to establish such TMDLs in accordance with the schedule if the state of California fails to establish the TMDLs.

E. American Littoral Society, et al. v. EPA, No. 96-489 (E.D. Pa.) -- **Pennsylvania**

In this case (filed January 1996), plaintiffs seek a court order directing EPA to disapprove the state's TMDL list and establish a list for the state, establish TMDLs for all listed waterbodies, disapprove the state's section 303(e) continuing planning process (CPP) and if the state fails to adopt an approvable CPP withdraw the state's NPDES authorization, and to consult pursuant to the Endangered Species Act in carrying out its obligations under sections 303(d) and (e).

F. American Littoral Society, et al. v. EPA, No. 96-339(MLP) -- **New Jersey**

In this case (filed January 1996), plaintiffs seek a court order basically the same as in the Pennsylvania litigation summarized above.

G. Sierra Club, et al. v. Saginaw, et al., No. 96-0527 (N.D. La.) -- **Louisiana**

In this case (filed February 1996), plaintiffs seek a court order directing EPA to establish a section 303(d) list for

the state, establish TMDLs for all waterbodies on the list, and establish a schedule for submission of TMDLs for all listed waterbodies.

H. Forest Guardians, et al. v. Browner, No. 96-0826 LH (D. N. Mex.) -- **New Mexico**

In this case (filed June 1996), plaintiffs seek a court order directing EPA to establish TMDLs for all listed waters in the state.

I. American Littoral Society, et al. v. EPA, et al., No. 96-330 (D. Del.) -- **Delaware**

In this case (filed June 1996), plaintiffs seek the same relief requested in the Pennsylvania and New Jersey cases summarized above.

J. Defend the Bay, Inc. v. Marcus, et al., No. 96-2591 DLJ (N.D. Calif.) -- **California (Newport Bay)** (complaint withdrawn)

In this case (filed July 1996), plaintiffs seeks a court order directing EPA to establish TMDLs for Newport Bay, Orange County, California, and restraining EPA for allowing California to permit discharges into the Bay of any pollutants responsible for water quality impairment. Plaintiffs withdrew their complaint; settlement negotiations are ongoing.

K. Northwest Environmental Advocates, et al. v. Browner, et al., No. 96-________ (W.D. Wash.) -- **Oregon**

In this case (filed September 1996), plaintiffs challenge EPA's approval of Oregon's 1994-96 section 303(d) list, allege that EPA failed to approve or disapprove TMDLs submitted by Oregon within 30 days, allege that EPA must establish a schedule for establishment of TMDLs in Oregon, and allege that EPA must disapprove the state's CPP and NPDES program.

III. NOTICES OF INTENT TO FILE CITIZEN SUITS

A. Cahaba River Society (filed June 1994) -- **Alabama**

B. Florida Wildlife Federation (filed August 1994) -- **Florida**

C. Sierra Club (Mississippi Chapter) (filed September 1995) -- **Mississippi**

D. Wyoming Outdoor Council, et al. (filed October 1996) -- **Wyoming**

E. Edward W. Mudd, Jr. (filed October 1996) -- **Alabama**

F. Arizona Center for Law in the Public Interest (filed October 1996) -- **Arizona** (notice focussed on waters impaired by mercury)

G. Neuse River Foundation (filed October 1996) -- **North Carolina**

12/2/96

Overview of Past and Present Litigation Concerning Section 303(d) of the Clean Water Act (Total Maximum Daily Loads)

Since 1972, when the Clean Water Act (CWA) was amended to include section 303(d), EPA has been sued on a number of theories concerning the promulgation of lists of water quality-limited segments and total maximum daily loads (TMDLs) for those segments. This litigation, which continues today, falls into four general categories:

(1) situations in which a State has failed to perform any activities under section 303(d);

(2) situations in which a State has engaged in a reasonable level of activities in implementing the requirements of section 303(d);

(3) challenges to EPA's listing or TMDL approval decisions or to EPA's promulgation of TMDLs; and

(4) situations in which the plaintiff, typically an environmental group, is using the TMDL requirements to achieve other objectives and hence that implicate other CWA programs.

Summarized below are significant past and ongoing cases that illustrate each category of TMDL litigation.

(1) Cases in which a State Has Failed to Perform Any Activities under Section 303(d) — Constructive Submissions of No TMDLs

- Scott v. City of Hammond, 741 F.2d 992, 996 (7th Cir. 1984), cert. denied, 469 U.S. 1196 (1985) — Indiana, Illinois

Plaintiffs alleged that EPA had a mandatory duty under section 303(d) to promulgate TMDLs for Lake Michigan if the responsible states failed to do so. In this case, neither Illinois nor Indiana had developed a TMDL for Lake Michigan. That fact, coupled with EPA's admission that no TMDL submissions had been made, in the Court's view "raise[d] the possibility that the states ha[d] determined that TMDLs for Lake Michigan [were] unnecessary." The Court of Appeals remanded the case to the District Court for a finding whether the states had "refused" to act. "[S]tate inaction amounting to a refusal to act" would be interpreted as a constructive submission of no TMDL, thus triggering EPA's duty to approve or disapprove such submission and to promulgate the TMDL itself (in the event of a disapproval). The Court of Appeals noted, however, that if "EPA promptly comes forward with persuasive evidence

indicating that the states are, or will soon be, in the process of submitting TMDL proposals," a finding of constructive submission would be inappropriate.

o Northwest Environmental Defense Center, et al. v. EPA, No. 86-1578 (D.Ore.) -- **Oregon**

Plaintiffs brought this mandatory duty suit in 1986 on a constructive submission theory. Oregon had done little, if anything, to implement the requirements of section 303(d). Accordingly, EPA entered into a Consent Decree with plaintiffs that addresses EPA obligations under section 303(d) in the event the State of Oregon does not carry them out. In November 1994, the same plaintiffs filed a new lawsuit in the U.S. District Court for the District of Washington against EPA in which they allege that Oregon has constructively submitted no 1994 303(d) lists, thereby triggering a duty by EPA to promulgate such lists.

o Alaska Center for the Environment v. Reilly, 762 F. Supp. 1422, 1426-29 (W.D. Wash. 1991) -- Alaska

In this case, all parties agreed that no TMDL had ever been submitted to EPA for Alaska. Moreover, the court found that the State of Alaska had not completed "even the first stage of the TMDL process." The court noted that although the State's 1988 305(b) report identified several hundred water bodies as impaired or threatened by water pollution, Alaska had identified only one water quality-limited segment prior to the litigation and had submitted to EPA a list of 48 segments after the litigation commenced. The court also concluded from the evidence that the State had not attempted to develop a TMDL and had never indicated any intent to do so in the future. Looking at both past activities and future intent, the court found that Alaska had constructively submitted no TMDLs and therefore ordered EPA to initiate its own process of promulgating TMDLs, including any and all necessary steps to effectively identify the appropriate water bodies at issue.

Northwest Environmental Defense Center, et al. v. EPA, No. C91-427R (W.D. Wash.) -- **Washington**

This mandatory duty suit was brought in 1991 by the same plaintiffs that commenced the 1986 Oregon 303(d) lawsuit. Like that suit, the plaintiffs alleged that State inaction amounted to a constructive submission of no TMDLs or lists. EPA entered into a Consent Decree in 1992 that required EPA to negotiate with the State of Washington a five-year plan for implementation of section 303(d) in the State, but the court retained jurisdiction. On December 7, 1994, these plaintiffs amended their complaint to challenge, among other things, EPA's action on the 1990, 1992 and 1994 303(d) lists and proposed TMDLs submitted by Washington.

(2) Cases in which a State has Engaged in a Reasonable Level of Activities in Implementing the Requirements of Section 303(d)

o National Wildlife Federation v. Adamkus, 1991 U.S. Dist. LEXIS 4037 (N.D. Ill. Mar. 27, 1991) -- Lake Michigan States

The plaintiffs in this case contended that insufficient TMDL activity by states bordering Lake Michigan constituted a constructive submission of no TMDLs and that EPA was required to approve or disapprove the submission and, if EPA disapproved the submission, to promulgate TMDLs for these states. The court rejected the plaintiffs' contention because the Lake Michigan states had made actual submissions under section 303(d), thus precluding a finding of constructive submission.

o Sierra Club v. Browner, 843 F. Supp. 1304, 1314 (D. Minn. 1993) -- Minnesota

Invoking the theory of "constructive submission," plaintiffs in this case alleged that EPA had a mandatory duty to promulgate a list of water quality-limited segments and accompanying TMDLs for Minnesota waters. The court found that the State had submitted several lists of waters to EPA and, although EPA disapproved these lists and promulgated its own list, refused to apply the constructive submission theory to these facts. The court also noted that the State was working on a TMDL for a 330-mile stretch of the Minnesota River, as well as TMDLs for five other water quality-limited segments, with schedules and dates ranging from July 1993 to December 2002. The court also noted that EPA had approved schedules for two more TMDLs. In concluding that Minnesota's TMDL activities precluded a finding of constructive submission, the court also noted that EPA had approved 43 TMDLs/wasteload allocations submitted by the State (which were in the form of water quality-based effluent limits in NPDES permits).

o Idaho Sportsmen's Coalition, et al. v. Browner, No. C93-943, W.D. Wash. -- Idaho

The first part of this law suit involved a challenge to EPA's approval of Idaho's 303(d) list. (See below) In the second part of this lawsuit, plaintiffs alleged that Idaho had constructively submitted no TMDLs, thereby triggering EPA's mandatory duty to promulgate TMDLs. On May 19, 1995, the Court ruled that Idaho's submission of two TMDLs, coupled with its progress in developing TMDLs in 29 listed segments and other pollution control strategies, was sufficient to defeat plaintiffs' constructive submission claim, although the court noted that it was a "close question." The court went on to find, however, that EPA had violated a "duty" under the statute and the TMDL regulations -- and had acted arbitrarily and capriciously -- in failing to develop, with Idaho, a reasonable schedule for the development of TMDLs for all listed WQLSs. (There are presently 962 waters on the list.) Per court order, EPA filed a schedule by May 19, 1996. EPA is awaiting decision from the court on its motion to dismiss the case.

- o Sierra Club, et al. v. Hankinson, No. 1 94-CV-2501-MHS (N.D. Ga.) -- Georgia

In this case, plaintiffs asserted that Georgia's failure to submit TMDLs over a long period of time amounted to a constructive submission of no TMDLs, thus triggering EPA's duty to promulgate TMDLs for Georgia. The court, in an order dated March 25, 1996, held that the constructive submission was not appropriate in this case "because Georgia has made some TMDL submissions, albeit totally inadequate." However, the court also found that "EPA's failure to disapprove of Georgia's inadequate TMDL submissions was arbitrary and capricious in violation of the Administrative Procedure Act and that EPA's failure to promulgate TMDLs for Georgia violates the Clean Water Act." On August 6, 1996, the parties completed briefing regarding the appropriate remedy for the TMDL violation. EPA is awaiting a decision from the court regarding the remedy.

(3) Challenges to EPA's Listing or TMDL Approval Decisions or to EPA's Promulgation of TMDLs

- o Dioxin/Organochlorine Center, et al. v. Rasmussen, (9th Cir. 1995) -- Columbia River TMDLs (WA, OR, ID)

In this case, environmental and industry plaintiffs challenged the adequacy and reasonableness of the TMDL for dioxin promulgated by EPA for the Columbia River. The District Court upheld the TMDL and concluded, among other things, that a TMDL need not set wasteload allocations for all point sources and load allocations for all nonpoint sources, provided that all discharges of a pollutant are considered. Court of Appeals affirmed, upholding EPA's TMDL for dioxin as sufficiently protective of subsistence fishers.

- o Idaho Sportsmen's Coalition, et al. v. Browner, No. C93-943 (W.D. Wash. April 14, 1994) -- Idaho List

In the first part of their lawsuit, plaintiffs successfully challenged as arbitrary and capricious EPA's approval of a list of 36 water quality-limited segments submitted by the State of Idaho. The court concluded, among other things, that the list improperly omitted waters identified as impaired in the State's 1992 305(b) report and failed to consider information available from the U.S. Forest Service. The court then directed EPA to promulgate its own list, which EPA did on October 7, 1994.

- o Sierra Club, et al. v. Hankinson, No. 1 94-CV-2501-MHS (N.D. Ga.) -- Georgia

In addition to raising constructive submission claims concerning TMDLs, the plaintiffs in this case also challenged EPA's approval of Georgia's 1994 § 303(d) list, which contained more than 300 waters. In its order dated March 25, 1996, the court ordered a trial on several listing issues raised by plaintiffs, notably (1) whether Georgia considered narrative water

quality criteria in compiling its 1994 § 303(d) list; (2) whether Georgia used "all existing and readily available" information in developing its list; and (3) whether Georgia made any showing that the waters it omitted from the list were achieving or were reasonably expected to achieve applicable water quality standards through enforceable mechanisms. The court agreed not to hold a trial because the parties reached an agreement in principle on the listing issues.

o Alyeska Seafood, Inc., et al. v. Browner, No. 95-1153C (W.D. Wash.) – Alaska TMDLs

Environmental group and industry plaintiffs challenge EPA's promulgation, pursuant to court order, of two TMDLs for the South Unalaska Bay in Alaska. The seafood processors allege that EPA lacked authority to promulgate the TMDLs because, they allege, water quality standards were already attained for the pollutants of concern. The environmental group plaintiffs assert that the TMDLs inadequately assure that attainment of water quality standards for those pollutants.

(4) Cases and Notices Implicating Other Programs.

(a) State Water Quality Monitoring Programs

o Alaska Center for the Environment v. Reilly, 762 F. Supp. 1422, 1426-29 (W.D. Wash. 1991) – Alaska

In this case, the plaintiffs obtained from the court an order directing EPA to prepare a report on the adequacy of ambient water quality monitoring in the State of Alaska. The report is to include an identification of material gaps in the existing data gathering efforts with respect to water pollution from logging, mining, seafood processing, urban development, oil and gas development, and agriculture.

o Sierra Club, et al. v. Hankinson, No. 1 94-CV-2501-MHS (N.D. Ga.) – Georgia

In this case, which focuses primarily on EPA's mandatory duty to promulgate TMDLs for the State of Georgia, plaintiffs also sought an order compelling EPA to undertake "all reasonably necessary ambient water quality monitoring" in Georgia and to promulgate a list of water quality-limited segments in the State of Georgia under section 303(d) on that basis. In its order dated March 25, 1996, the Court held that EPA had no mandatory duty under the statute to monitor Georgia's waters, but noted that "monitoring may be an appropriate equitable remedy" if the plaintiffs prevail on their § 303(d) list claims.

o Ohio Valley Environmental Coalition, Inc., et al. v Carol Browner, et al., No. 2:95-0529 (S.D.W.VA.) -- West Virginia

In this case, plaintiffs are asking the court to direct EPA to establish § 303(d) lists and TMDLs for West Virginia. Plaintiffs are also seeking an injunction establishing an expeditious schedule for EPA compliance with these duties and ensuring that either West Virginia or EPA undertake monitoring to determine the full set of West Virginia's "water quality limited" waters.

(b) State NPDES Permit Programs

o Northwest Environmental Advocates, et al. v. Browner, No. 91-427R (W.D. Wash.) -- Washington

In this amended complaint, the plaintiffs ask the court, among other things, to order EPA to develop a schedule for the development of TMDLs for all water quality-limited segments in the State of Washington. They also seek an order directing EPA to disapprove the State's continuing planning process under section 303(e) because of the alleged section 303(d) violations and, on that basis, to disapprove the State's NPDES permit program and to prohibit the issuance or renewal of any new or existing NPDES permit that "would allow for additional discharge of pollutants into the navigable waters of the State of Washington."

o Kansas Natural Resources Council, Inc., et al. v. Browner, No. 95-2490-JWL (D. Kansas) -- Kansas

In this case, in addition to seeking an order directing EPA to disapprove Kansas' § 303(d) list and to promulgate § 303(d) lists and TMDLs for Kansas, Plaintiffs ask the court to order EPA to withdraw its approval of Kansas' NPDES permit program, to stop making permit-related grants to Kansas, and to refrain from issuing or renewing NPDES permits for Kansas until EPA has approved an adequate "continuing planning process" under CWA § 303(e) for Kansas.

(c) State Drinking Water Programs

o Natural Resources Defense Council, et al. v. Fox, No. 94 Civ. 8424 (S.D.N.Y.) -- New York

In this case, which was filed on November 18, 1994, the plaintiffs ask the court for an order directing EPA to promulgate a list of water quality-limited segments for the State of New York as well as TMDLs for those waters. The expressed intent of this complaint, however, is to protect the drinking water supply for New York City through the development of TMDLs for New York City's drinking water reservoirs and tributaries, and the plaintiffs accordingly ask the court to direct EPA to assign a high priority to the protection of those water segments. On

December 12, 1995, the court denied each party's motions for summary judgment and ordered a trial on the question whether New York has created and submitted TMDLs sufficient to defeat the constructive submission theory invoked by plaintiffs. EPA estimates that the trial may occur in November or December. In its December order, the court was skeptical of EPA's argument that the State's wasteload allocation analyses performed in the context of NPDES permitting decisions were TMDLs.

(d) Endangered Species Act Issues

o American Littoral Society, et al. v. EPA cases -- Pennsylvania and New Jersey

These cases, which were filed on January 24, 1996 (but not served), raise both standard TMDL and § 303(d) listing claims. They also assert that EPA has violated the Endangered Species Act in failing to consult with the U.S. Fish and Wildlife Service in connection with EPA's § 303(d) oversight functions.

Active Lawsuits Summarized Above:

Alaska
Alaska TMDLs
Georgia
Idaho
Kansas
New Jersey
New York
Oregon
Pennsylvania
Washington
West Virginia

Additional Active Lawsuits:

California - Pacific Coast Federation of Fishermen's Associations, et al., v. Marcus
California - Defend the Bay v. EPA
Louisiana - Sierra Club et al., v. Saginaw et al.
Delaware - American Littoral Society v. EPA
New Mexico - Forest Guardians and Southwest Environmental Center v. Browner

Notices of Intent to Sue:

Alabama
Florida
Oregon
Mississippi

Appendix B.

DEQ Draft Guidance for Nonpoint Source Activities in Water Quality-Limited Waterbodies

DRAFT

Montana Department of Environmental Quality Guidance For Nonpoint Source Activities That May Affect Water Quality Limited Waterbodies

March 1996

It is the intent of this guidance to describe a Nonpoint Source Pollution Total Maximum Daily Load (TMDL) process that is adapted to the unique conditions in Montana, will meet the intent of the federal Clean Water Act Section 303(d) and the Montana Water Quality Act, will maintain or improve water quality so that Montana Water Quality Standards are met and will reduce the time that would otherwise be needed to fully develop a traditional TMDL.

GENERAL ROLES AND RESPONSIBILITIES.

A. The Dept. of Environmental Quality Water Quality Division (DEQ/WQD) is responsible for insuring that Montana's water quality meets the intent and specific requirements of the Montana Water Quality Act and applicable sections of the federal Clean Water Act (CWA) e.g., §303(d). To meet state responsibilities under CWA §303(d) DEQ/WQD will use available data to develop and update the list of water quality limited waterbodies in need of TMDL development (the "§303(d) list"), review and comment on proposed activity plans that affect those waters and provide specific recommendations when needed or requested.

B. The US EPA is responsible for providing general oversight and technical assistance to Montana; approval of Montana's §303(d) list; approval of traditional TMDLs; and approval of this NPS TMDL guidance as meeting the intent of §303(d) of the federal Clean Water Act.

C. Federal, state and private land owners are responsible for insuring that their activities do not cause impairment of the surface waters of Montana. They are also responsible for monitoring the quality of waters they control or may affect and for supplying water quality information to DEQ/WQD that may be used to determine use support.

I. INTRODUCTION.

There are two basic reasons for pursuing the TMDL process:

A). To maintain or improve the water quality of threatened

waterbodies so that Montana's water quality standards are met and all beneficial uses are fully supported.

B). Improve the water quality of partial or non-supporting waterbodies so that they will fully support all designated uses and water quality standards are met.

Responsible parties, whether private land owner(s), agency(s) and/or corporation(s) are responsible for protecting water quality and associated beneficial uses on lands under their control and are responsible for improving water quality when activities (e.g., livestock grazing or timber harvest) they have undertaken are or are suspected to be contributing to the §303(d) listed water quality limited status of a waterbody.

A water quality limited waterbody is a stream, stream segment, or lake that does not or will not meet water quality standards even though technology based controls, reasonable land, soil and water conservation practices or best management practices (BMPs) have been used or are planned to be used.

This guidance outlines minimum requirements for compliance with federal and state water quality laws for those parties responsible for activities that may cause nonpoint source pollution and affect water quality limited waterbodies (Montana §303(d) list). It should be used by all private, federal or state landowners or agencies that are proposing new activities or are modifying existing management plans that may affect a water quality limited segment or waterbody.

The "watershed approach" to land and water quality management is highly recommended during TMDL development to improve degraded conditions or protect existing conditions.

Use of this TMDL guidance should be limited to watersheds where pollution control activities can be focused on a few similar sources. In most cases the 8 digit USGS hydrologic unit code (HUC) boundary can be used to delineate the extent of cumulative effects analysis.

Implementation of the NPS TMDL outlined here will rely upon application of reasonable land, soil and water conservation practices or advanced BMPs in addition to those required as routine measures (e.g., Montana Best Management Practices for Forestry or Natural Resources and Conservation Service (NRCS) standards and specifications); and monitoring of their effectiveness and water quality.

Watersheds that contain a combination of permitted point source(s) and nonpoint sources of pollution or where a larger watershed is being addressed should follow traditional US EPA TMDL development

guidance[1].

Activities that may affect waterbodies where use support has not been assessed or are known to be fully supporting designated uses must comply with the Montana Nondegradation Policy (ARM 16.20.701-714) and other rules and laws that may apply.

II. BRIEF DESCRIPTION OF THE TRADITIONAL TMDL PROCESS.

The TMDL process:

a) identifies the maximum load (e.g., standard concentration at a critical flow) of a parameter (e.g., nutrients or metals) that a waterbody is able to assimilate and still fully support its designated uses and meet water quality standards;

b) allocates portions of the maximum load to all sources;

c) identifies the necessary controls that are to be implemented voluntarily or through regulatory means and;

d) describes a monitoring plan and associated corrective feedback loop to insure designated uses are fully supported.

All sources of a pollutant should be considered when the total maximum daily load is developed. The sources may be consolidated into general categories or they may be identified individually depending upon the quality and quantity of supporting data. Uncertainty associated with load development that may be caused by questionable model accuracy, an incomplete data set or other unknown interactions may be expressed as a specific margin of safety (e.g., 20% reduction of calculated load allocations) or may be included in the load development for each source by using worst case scenarios.

A TMDL may be done following present US EPA guidance in a structured manner using an existing data base and control technology or in a series of phases to develop a data base of existing conditions and BMP effectiveness pilot studies prior to finalizing the TMDL and implementing the necessary controls (figure 1).

Where nonpoint sources of pollution are present several iterations of monitoring BMP implementation and waterbody response may be needed before the TMDL process is complete.

III. SIMPLIFIED NPS TMDL.

The simplified NPS TMDL process presented here can be reduced to two basic components:

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[1] Guidance for Water Quality-based Decisions: The TMDL Process, US EPA, Office of Water, EPA 440/4-91-001, April 1991.

A. TMDL development.

1). Identify the water quality goal that is desired (e.g., full aquatic life use support) and the parameter(s) (e.g., channel stability index) that will be used to measure progress and indicate when the water quality goal has been reached.

2). Develop an activity plan that identifies the controls (BMPs) that will be used to maintain or attain the water quality goal identified above; and develop the instream monitoring plan that includes an information feedback and BMP adjustment loop.

B. TMDL implementation.

1). Implement the activity plan and monitor the effectiveness of the water quality based NPS pollution controls.

2). Evaluate the monitoring results, modify the pollution controls if necessary and report summary results to DEQ/WQD.

If BMPs will be applied to areas other than the proposed activity (i.e., previously timbered or grazed areas in the watershed) to improve present conditions, the projected improvements and time tables should be included in the activity plan (e.g., 80 percent reduction in suspended sediment production within five years).

IV. PUBLIC COMMENT.

The need for public involvement in the NPS TMDL process may be fulfilled by following National Environmental Policy Act guidance for activities on federal lands; Montana Environmental Policy Act guidance for state administered lands; meetings and other activities sponsored by watershed protection organizations or other involved groups; or may be voluntarily initiated by private land owners.

V. CUMULATIVE EFFECTS.

The cumulative effects of proposed and existing activities within a watershed that may contribute to the parameter causing the water quality impairment should be addressed in the NPS TMDL.

The cumulative effects analysis does not need to extend beyond the boundary of the eight digit USGS hydrological unit being impacted. Consideration of cumulative effects is especially important, for example, where a sediment increase in a fully supporting tributary by itself is not projected to impact the uses of the tributary but the combined sediment load from other independent activities in the watershed may have an impact on an impaired downstream reach.

Cumulative effects on fully supporting waterbodies must comply with the Montana Nondegradation Rules.

VII. MONITORING AND REPORTING.

For all activities, monitoring best management practice (BMP) implementation and effectiveness (through BMP audits) and waterbody response (through instream monitoring) is necessary to document the condition of the waterbody and its level of use support before, during and after the activity. Summary reports submitted annually describing the water quality of the impacted segments or watershed is recommended.

Duration and intensity of the monitoring program will depend upon the length of time an individual activity will impact water quality and the potential for degradation. For example the water quality impacts of a grazing allotment lease needs to be for the duration of the lease and the effect of a logging operation on water quality needs to monitored though the watershed recovery period.

The post-activity monitoring results can be used to reassess the waterbody and, if warranted, modify its use support status and remove it from the §303(d) list.

APPENDIX C.

EPA Guidance for Nonpoint Source TMDLs

Past Point and/or Nonpoint Source TMDLs

This is sample language that can be used to transmit past documents the State feels qualifies as TMDLs associated with NPDES permitting as well as nonpoint source project implementation plans, clean lakes plans, and any other watershed planning documents. The "other documents" category can include work completed by agencies other than the state water quality division, such as federal land management agencies, that addresses the key components of water quality standards implementation through TMDLs.

The State should consider sending past work in a batch manner, including several documents or NPDES permits at one time. The following language is written presuming the State will do this.

Max H. Dodson, Assistant Regional Administrator
Office of Ecosystem's Protection and Remediation
U.S. EPA; Region VIII
999 18th Street; Suite 500 (8EPR)
Denver, Colorado 80202

Dear Mr. Dodson:

In accordance with Section 303(d) of the Clean Water Act, the [*State organization*] submits for your review and approval the total maximum daily loads (TMDLs) listed on the attachment. These TMDLs have been established at a level necessary to meet the applicable water quality standards with consideration of seasonal variation and a margin of safety.

Please note that the TMDLs listed on the attachment have already been made available to your office for review. We are now requesting formal, written approval of these as Section 303(d) TMDLs. The following provides a list of the waterbody for each TMDL, the pollutants associated with each TMDL, and the [*name of the NPDES permit and statement of basis that provides the documentation for each TMDL and corresponding wasteload allocations/load allocations*] OR [*name of the nonpoint source project implementation plan, clean lakes plan, or other document provides the documentation for each TMDL*]. Please contact us if you need further information that is not already in your files on each of these TMDLs.

We understand that your office has 30 days to respond to this submittal. Please call [*name*] of our office with any questions you may have on this matter.

Sincerely,

cc: Bruce Zander (8EPR-EP)

New Nonpoint Source TMDLs

This is sample language that can be used to transmit new documents the State feels qualifies as TMDLs associated with nonpoint source project implementation plans, clean lakes plans, and any other watershed planning documents. The "other documents" category can include work completed by agencies other than the state water quality division, such as federal land management agencies, that addresses the key components of water quality standards implementation through TMDLs.

This language an be used as a separate letter or can be incorporated into transmittal letters the state already uses in sending reports to EPA. Feel free to adapt the language to your situation.

Max H. Dodson, Assistant Regional Administrator
Office of Ecosystems Protection and Remediation
U.S. EPA; Region VIII
999 18th Street; Suite 500 (8EPR)
Denver, Colorado 80202

Dear Mr. Dodson:

In accordance with Section 303(d) of the Clean Water Act, the [*State organization*] submits for your review and approval the total maximum daily loads (TMDLs) for the [*waterbody name*] provided for in the enclosed [*project implementation plan, clean lakes plan, or other document*]. These TMDLs have been established at a level necessary to meet the applicable water quality standards for [*name of pollutants or constituents*] with consideration of seasonal variation and a margin of safety. The following designated use classifications will be protected through implementation of these TMDLs: *[stream use classifications]*.

Our understanding is that your office has 30 days to respond to this submittal. Please contact [*person*] of our staff with any questions you may have on this matter.

Sincerely,

cc: Bruce Zander (8EPR-EP)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

JUN 26 1996

Ref: 8EPR-EP

J. David Holm, Director
Water Quality Control Division
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530

Re: Administrative Record of Review and Approval for Total Maximum Daily Loads (TMDLs)

Dear Mr. Holm:

Recent litigation related to requirements of Section 303(d) of the Clean Water Act has prompted us to review how we in Region VIII are demonstrating compliance with §303(d). In particular, the Clean Water Act requires states to develop prioritized lists of waters for which TMDLs are still needed as well as to develop TMDLs for those waters. Over the last several years plaintiffs have targeted states where no §303(d) list has been developed or where deficient lists have been submitted to EPA. More recent litigation has focussed on the lack of TMDL development in certain states. Litigation has resulted in courts directing EPA to promulgate lists as well as TMDLs in certain states.

The formula for a legally defensible TMDL program appears to have remained the same: a state should develop a technically sound list of waters in need of TMDLs and develop technically defensible TMDLs as part of the state NPDES, nonpoint and watershed planning activities. A clear accounting of where the water quality problems of the state are and what processes are in place to identify and implement solutions is key. In addition, an important point is to allow all interested parties access to the process of listing and developing TMDLs.

We have been working with each of the Region VIII states to assure the development of technically defensible TMDL waterbody lists. Recent court decisions, however, have changed the perspective and definition of what constitutes a TMDL. Past court decisions have allowed for "functional equivalent TMDLs" when it is shown that the actions on the part of the state met the substantive intent of the Act (reference: *Sportsmen's Clubs of Texas v. Layton, No. CA3-86-0121-R; N.D. Tex.*). We feel that the Region VIII states have most often fallen under this category of performing "functional equivalent TMDLs". However, the recent federal court decision in Georgia (see attached decision) has made it clear that the administrative record must show a deliberate submittal of TMDLs to EPA and EPA's subsequent review and approval of those submittals as TMDLs. It appears we can no longer rely on the concept of "functional equivalent" TMDLs and no longer rely on the review and approval of occasional high profile TMDLs.

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We feel there are a significant number of actions completed by the State that would qualify as TMDLs and could be submitted, reviewed, and approved as TMDLs. We are suggesting that your State consider submitting those actions to get due credit under Section 303(d). This includes products from the NPDES permitting, nonpoint source, and clean lakes programs of the State. This could also include actions of a third party that could be submitted by the State as a TMDL. An example is a watershed analysis and proposed control actions as part of an environmental impact statement (EIS) that has obtained state §401 certification.

For the purpose of improving the administrative record related to Section 303(d), we invite all states to come to agreement with our office on the procedures for submittal of TMDLs. We will be contacting each state over the next several weeks to explore ways in which you feel we can best incorporate a TMDL approval process into our current programs.

Where a program is already operating appropriately, we are striving for minimal change in what a state is currently doing as well as minimal effort in providing the administrative record of review for TMDL actions. For instance, states are already submitting to EPA a number of implementation plans and assessments under the clean lakes and nonpoint source programs for review; those same plans and assessments may qualify as TMDLs and can be submitted and approved as such. Likewise, review and approval of water quality-based portions of NPDES permits as TMDL/WLAs (wasteload allocations) could be accomplished in the course of the review of those permits. We suggest that past actions as well as future actions be considered for approval as a TMDL. For our part, we would review submittals and provide letters of approval to the state for each of those actions that qualify as an acceptable TMDL. The Act requires that EPA review TMDLs in less than 30 days.

What constitutes a TMDL? The current definition of a TMDL is fairly broad. Simple loading calculations could qualify as a TMDL as well as any number of actions that provide solutions to water quality problems (or water quality threats). Based on Agency guidance and policy, the following provides minimum requirements and a standard for review of TMDLs:

- ■ Application of TMDLs result in maintaining and attaining water quality standards (including the numeric, narrative, use classification, and antidegradation components of the standards; a "phased" TMDL can be used where there is a level of uncertainty; in addition, TMDLs can rely on either regulatory or voluntary approaches to attain standards);

- ■ TMDLs have a quantified target or endpoint (a numeric water quality standard often serves as the target, but any indicator or set of indicators which represent the desired condition would suffice);

- ■ TMDLs include a quantified pollutant reduction target, but this target can be expressed in any appropriate manner (TMDLs need not be expressed in pounds per day or concentration when alternative means of expression are better suited to the waterbody problem: TMDLs can be expressed as mass per unit of time, toxicity, % reduction in sediment or nutrients, or other measure);

- **TMDLs must consider all significant sources of the stressor of concern** (all sources or causes of the stressor must be identified or accounted for in some manner; this accounting can lump several sources of unknown origin together; the TMDL need only address the control of a subset of these sources as long as the water quality standards are expected to be met);

- **TMDLs are supported by an appropriate level of technical analysis** (allocations for nonpoint sources are often best professional estimates whereas waste load allocations for point sources are often based on a more detailed analysis);

- **TMDLs must contain a margin of safety and consider seasonality** (a margin of safety can be either explicit or implicit in the analysis or assessment);

- **TMDLs apportion responsibility for taking actions** (allocations may be expressed in a variety of ways such as by individual discharger, by tributary watershed, by source or land use category, by land parcel, or other appropriate scale or dividing responsibility);

- **TMDLs involve some level of public involvement or review** (public participation should fit the needs of the particular TMDL).

Please contact Bruce Zander (303/312-6846) for questions on this matter. He will be working with each state to solicit ideas on how best to structure the TMDL review and approval process.

Sincerely,

James E.

for Carol Campbell, Chief
Ecosystems Protection Program

Attachment (GA Decision)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

Ref: 8EPR-EP

August 16, 1996

MEMORANDUM

SUBJECT: Submittal of NPDES Permits/Rationales as TMDLs

FROM: Bruce Zander
TMDL Coordinator (EPR-EP)

TO: State NPDES and TMDL Coordinators

At the recent meeting of Tribes, States, and EPA representatives in Sheridan, the issue of TMDL review and approval was discussed. This letter is intended to serve as a followup to that discussion.

As stated in the June correspondence to all of the Region VIII States, there has come a need to provide an administrative record of review and approval of TMDLs. This can include all qualified water quality-based decisions associated with the State's water quality program. The State activity that is most often linked to TMDL development (e.g. implementation of water quality standards) is the development of water quality-based limits in NPDES permits. Through review and approval of NPDES permits/rationales as TMDLs, we hope to acknowledge the work being accomplished by the States and to give credit to the States under Section 303(d) of the Clean Water Act.

The procedures discussed in Sheridan included the following:

- Future NPDES Permits: For each NPDES permit that has a water quality-based limit that considers background (or upstream) loadings, the statement of basis or rationale with the NPDES permit would serve as the TMDL. The only change in current practice would be to include a statement such as the following in the public notice as well as in the permit or statement of basis:

  This NPDES permit and accompanying statement of basis serves as a total maximum daily load under Section 303(d) of the Clean Water Act and will be submitted to the US EPA Region VIII for review and approval.

  The permits should be sent to our office through normal means, but with the explicit request that the permit/statement of basis be reviewed as a Section 303(d) TMDL. As usual, the Regional time for TMDL review will stay with

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in the confines of the public review period. The intent is not to add delay of permit issuance but to continue reviewing the water quality-based provisions in the permits as we have in the past. In the case of Colorado where there is electronic transfer of permits to our office, we recommend that the State send us a letter requesting that all such transfers be deemed a submittal and request for TMDL review and approval. We'll send a letter back acknowledging same.

- Issued NPDES Permits: For those permits already issued by the states that would qualify as a TMDL, we ask that the state consider sending those in for approval. This could be done by sending a letter with the list of rationales/permits the state feels are qualified and for which the State seeks §303(d) approval. These permits have already been subject to EPA review and our office should have the pertinent information on file. We are also recommending that the state send out a general public notice for this group of permits indicating that EPA approval under Section 303(d) is sought, using similar language as indicated above.

We briefly mentioned State TMDL implementation procedures at the Sheridan meeting. EPA relies on these procedures as a presumed method used to translate water quality standards into permit limitations. When a State has published TMDL methods, EPA review can be less detailed. It would be appropriate for each State to review and update their procedures and secure written EPA approval on those procedures. Again, for most States, this would involve obtaining approval on procedures that EPA has already reviewed and the State has been using for some time.

Please call me at 330/312-6846 or Toney Ott (303/312-6909) with questions on this subject.

APPENDIX D.

Montana Watershed

Approach Workshop

Proceedings

MONTANA WATERSHED APPROACH WORKSHOP

NOVEMBER 13, 14, AND 15

MEETING NOTES

RECEIVED
DEC 29 1995
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION

NOVEMBER 13 (3:00 - 5:00)

Introduction

The meeting began with an introduction by Gary Ingman of the Montana Department of Environmental Quality (DEQ). Montana DEQ is currently working on a reorganization plan that will be based on functional divisions based on client services (i.e., permitting; compliance /enforcement; restoration/improvement; solutions/prevention planning). Work groups have been established to address a series of planning objectives established by Director Mark Simonich. The purpose of the Montana Watershed Approach Workshop is to evaluate how a statewide watershed framework could promote coordination of activities between the functional divisions. In addition, the workshop will identify opportunities and barriers of the watershed approach to increase the efficiency and effectiveness of DEQ in achieving the goals identified in the department's mission statement. Therefore, goals of the watershed approach workshop are consistent and supportive of the objectives identified by the Director. A watershed approach would not be proposed as an alternative of the functional organization strategy, but rather as a component of that strategy.

> *Montana DEQ Mission Statement: The Department of Environmental Quality's mission is to protect, sustain, and improve a clean and healthful environment to benefit present and future generations.*

Watershed Approach Background Information and Lessons Learned

To support the evaluation of a statewide watershed framework the workshop began with a review of the principles, features, and experiences of other states with the watershed approach. A summary of that review follows.

The principal features of the watershed approach process are described below.

- **Stakeholder involvement** is explicitly built into the watershed approach. Stakeholders are involved from the beginning through implementation of watershed plans.

- Development of **environmental objectives** is tailored to specific watershed conditions and includes both management objectives and outcome-based objectives.

- Procedures to identify **priority concerns** allow participants to more effectively target the use of scarce mitigation and preservation resources.

- **Integrated solutions** are developed that coordinate the efforts of local, state, and federal stakeholders.

- A broader base of **resource protection options** is developed by stakeholders collaborating on complementary objectives.

A *statewide* watershed approach will allow agencies to better coordinate watershed projects and watershed efforts. This may allow for incorporation of multi-media aspects.

The common elements of the watershed approach are:

- *watershed management units*: Participating stakeholders adopt geographic management units using commonly defined boundaries to provide spatial coordination for management activities.

- *watershed management cycle*: The watershed management cycle provides temporal coordination to stakeholder activities and is made up of three components -- a series of steps for building and implementing watershed plans; a common schedule of activities within these steps; and a sequence for addressing watersheds.

- *stakeholder involvement*: The watershed approach includes administrative structures and procedures for incorporating a broad range of stakeholders in the watershed management planning and implementation cycle.

- *strategic monitoring*: Strategic monitoring addresses information needs identified by stakeholders and supports watershed goals and objectives. This element supports the specific environmental objective and priority setting feature of the watershed approach.

- *watershed assessment*: A comprehensive watershed assessment provides a common basis for identifying priority issues and the development of management strategies.

- *prioritization and targeting:* This element results from the recognition that environmental mediation and preservation needs will vary from location to location, and that the needs will consistently exceed the resources available to address them. This element provides procedures for assigning scarce resources more effectively and efficiently.

- *developing management strategies*: Watershed teams comprised of a broad range of stakeholders provide the capability to develop comprehensive solutions to targeted watershed water quality issues.

- *watershed management plans*: Watershed plans provide a common product for stakeholders that consolidate the fulfillment of many local, state, and federal requirements. The plans document the consensus building process and serve as a guide for stewardship or an "owner's manual" for watershed stakeholders.

- *implementation:* The implementation element keeps the process focused on practical solutions and provides a horizon for planning activities. Watershed plans include a chapter describing specific implementation responsibilities and schedules.

These elements can be used as tools in the strategic planning process to design an integrated framework for incorporating the principles of watershed management into the participating organizations daily operations. Other elements may be identified during the statewide framework strategic planning process and some elements may not be addressed. MT DEQ would need to appoint a task group to tailor each element to address Montana's needs.

Not all activities have to be incorporated in the watershed process (e.g., water rights).

Watershed Approach Scoping: Montana DEQ Objectives

An objective of the November 13 meeting was to assess the "lessons learned" from other states that have adopted a watershed approach. The following questions were used to help focus the presentation on DEQ's objectives. Following each question is a brief rationale offered by the meeting facilitator (Clayton Creager) of possible solutions with a watershed approach.

- How can watershed management principles be incorporated into the proposed (new) organizational structure?

The watershed approach has been used in a variety of organizational structures. The watershed approach is a coordination matrix that can overlay any program or functional unit based organizational structure. The purpose of the framework development process is to reach consensus solutions for improving operations across organizational boundaries. No state has reorganized their program in response to developing and implementing a watershed approach. Watershed teams would promote good communication between functional divisions.

- What features of the watershed approach support the DEQ mission statement?

    - ♦ The watershed approach uses a long-term management framework that uses proactive solutions tailored to local conditions and needs.

- How can the watershed approach help resource agencies identify complementary objectives and act on those objectives?

    - ♦ Watershed teams that are focused on common management units and schedules provide the capability for improved coordination within agencies and between agencies. The watershed management steps begin with stakeholder outreach and involvement and encourage the identification of complementary objectives. The watershed framework provides the mechanism for developing and implementing management agreements for complementary objectives.

- How can the watershed approach support increased public involvement (improve quality of involvement)?

    - ♦ Stakeholder involvement is built into the watershed approach. Stakeholder watershed advisory committees provide opportunities for significant input throughout watershed planning and implementation steps. Watershed meetings and newsletters ensure that members of the community that cannot participate on the advisory community also have opportunities for input and involvement. Watershed teams present local communities with a well integrated entity for resource management issues.

Watershed protection approach framework development can take from 18 months to 2 years. The framework development is done while work group members are also doing their usual jobs. DEQ's planned reorganization is already underway. If DEQ is considering a watershed approach it could be folded into the reorganization initiative.

A question was raised as to whether any state had incorporated water rights into the framework document. States are trying to build aspects of water rights into the watershed approach. Utah has included water resources into their approach. Sustainability is a key objective of watershed management in Utah. Several of Utah's streams, aquifers, and other ground water resources are over allocated. Using hydrological units as an accounting unit will aid in designing conservation programs and in mediating water allotment and use decisions. In addition, water diversion and return flow impacts are examined as part of the watershed assessment component of Utah's watershed approach. If water flow management is impacting water quality watershed teams will develop solutions (i.e., improved diversion and return structures, timing, etc.). Water rights are not impacted by these decisions. A voluntary easement program is under consideration.

Support for a watershed approach must be developed at all levels within the agency. However, management support of watershed framework development is vital to its success.

The statewide watershed framework does not replace individual watershed projects. The watershed approach is a better way of managing the limited resources available to resource management agencies.

A statewide watershed framework document describes how watershed planning and management will be implemented in individual watersheds across the state. The statewide watershed framework document is a compilation of a series of consensus decisions made by stakeholders on the statewide watershed work group. The work group will need to gather a lot of information concerning available resources during the framework development process. Stakeholder outreach is conducted through a communication strategy created during framework development.

The watershed approach could provide essential bridges between the functional organizational units (described in the Director's reorganization guidance) to coordinate water quality programs. Each watershed team needs members with different specialties. Therefore, the watershed approach could provide the means for coordination between the programs.

Is it possible to coordinate air-to-water pollutant trading into a statewide watershed framework? Atmospheric deposition of pollutants/nutrients can be significant sources of contaminants for surface and ground water. Montana is interested in incorporating multi-media aspects into water quality management.

How effective is the watershed approach in remote watersheds (i.e., rural with higher quality waters/wetlands)? The watershed approach improves the basis for setting NPS, restoration and preservation/protection priorities. Significant point sources are not a prerequisite for an effective watershed approach.

The structural elements that help establish the statewide watershed framework are, geographic management units (spatial focus), watershed management cycle (temporal focus), and watershed action plans (product focus).

How many and who would be on a watershed management team? Twenty people is the typical upper limit in other states. Representatives from local, state, and federal agencies comprise most of the team. The team would be selected to address the issues identified by stakeholders. Citizens and other stakeholders woould also be represented on the team.

Are conservation districts usually the local basis for implementation? Conservation districts are sometimes the local implementation groups, but county consortiums or Councils of Government (COGs) are also often the local entities. The base management unit (e.g., river basin) covers a large geographic area. There needs to be a statewide organizational structure (e.g., Conservation Districts) that can provide the foundation for implementation of local projects.

Could local coordinating groups be public health agencies? It is possible that the local coordinating groups could be public health agencies. Participants noted that there is a concern that DEQ may lose its human health focus as a result of the new organizational structure.

The watershed approach incorporates implementation as a basic element. The watershed cycle also provides a long-term management framework for problems that will take a long period of time to solve.

The meeting on November 14 will have a workshop format. The meeting is primarily for staff from the DEQ Water Quality division, although anyone is welcome to attend. The discussion will be principally on how to coordinate the watershed approach elements and how the watershed approach aligns with the DEQ reorganization. The meeting will be from 8:30 to 4:30 in the same room.

Cadmus will produce a summary document with the results of the meetings. The meeting summary document needs to be prepared in the near-term, since decisions concerning the DEQ reorganization are imminent.

NOVEMBER 14 (8:30 - 4:30)

The purpose of the meeting in the afternoon is to come up with recommendations on whether and how a watershed approach be implemented within Montana DEQ.

The meeting began with a recap of the statewide watershed approach and review of the watershed framework elements. The meeting will not address the specifics of the framework elements, since Montana has not yet decided to adopt a watershed approach. Today's meeting will emphasize discussion of how a watershed approach could be used in Montana to better manage water resources and water quality. The common product that results from a watershed approach - watershed management plans - will be the focus of today.

Geographic Management Units:

The use of Geographic Management Units (GMUs) to organize water quality activities brings a different focus to Water Quality programs. The following elements result from use of GMUs:

- Allows the participating stakeholders to focus resources on common management units;
- GMU boundaries can be used as a tool for scaling and nesting, allowing the management area to be sized to the specific problem; and
- The agency can work alongside groups with ongoing activities within the GMU.

The watershed approach will not solve all problems and conflicts that the DEQ deals with, but it will significantly reduce litigation and administrative procedures.

Montana could be divided into GMUs using major river basins as the base management unit. DEQ would need to distribute available resources for preparation and implementation of the management plans consistent with the watershed sequence and cycle.

Prior to reorganization, the Water Quality division had approximately 78 FTE (full-time employees) available, not 400. Would implementation of the watershed approach have been possible with this number of employees? The basis of the watershed approach is to more effectively allocate existing resources. The watershed approach is not dependent on an increase in available resources. The process involving stakeholders and the agency is designed to determine what the agency can do with existing resources. The watershed approach is a planning process/tool.

Hydrologic boundaries are cut across political boundaries. What have been the implications in other states? Western Montana has several active watershed initiatives:

- Clark Fork Watershed
- Flathead Lake
- Blackfoot
- Upper Clark

The watershed teams include stakeholders that have a significant interest in the management unit. Bringing together a broad range of programs and agencies into one group reduces the coordination burden for local agencies and citizens.

Sixteen major basins have been delineated for Montana by USGS and serve as management units for Water Resources Fish & Wildlife, and other agencies.

Watershed Plans:

Watershed management plans, were not discussed in the November 13 meeting. These plans can be designed so that they fulfill requirements including: 305(b) reports, triennial standards review, stormwater, phased TMDLs, 319 NPS Management Plans, 314 Clean Lakes Reports. Managers may worry about how to track grants under the watershed approach. Block grants will begin to be used by EPA. The DEQ can use the management plans as entities that can be audited. The watershed approach is an effective negotiating tool with EPA and other funding sources. The EPA is very interested in supporting statewide implementation of the watershed approach.

An example of a Watershed Management Plan outline from Delaware is included in the Toolbox. This Plan included multi-media and multiple agencies. The seven chapter headings are summarized below:

1. *Introduction/Summary*: Describes the: purpose of the document; planning process; public involvement; history of water quality management in the management unit; and general goals and objectives identified by stakeholders during the watershed cycle.

2. *General Basin Description*: Provides background information on the management unit including: physical, geographic, hydrologic, and ecological features; governmental organization and demographics; economic base; land use/land cover; water use designations and corresponding standards; and pollutant sources.

3. *Existing Environmental Conditions, Uses, and Stresses*: For surface and ground water units describes the current and historical conditions. Assessment could include use support status summaries, as well as other assessment endpoints selected by stakeholders.

4. *Major Concerns and Priority Issues*: This chapter will show how stakeholders assigned priorities to restoration and protection objectives including a ranking of critical issues and waterbodies of concern.

5. *Long-Term Goals and Management Strategy*: Describes how resources will be used on targeted problems and waterbodies. A quantitative description of management strategies to be implemented and the measures of success for those strategies.

6. *Implementation*: Provides a specific schedule and listing of resource allocation by stakeholder. Any agreements that were developed for the purpose of facilitating implementation will be included in this chapter.

7. *Next Steps*: Describes data gaps, key uncertainties, resource shortages, and ranked problems that were not addressed in this cycle that will be revisited in the next cycle.

Questions/Comments of Workshop Participants:

How can you implement the wetlands program under the watershed approach? Other states have used watershed scale advanced wetlands identification as a planning tool with some success. The more comprehensive assessment provides agencies with an improved basis for decision making on wetlands permits. Agencies can also target key wetlands to work with landowners on voluntary conservation easements. Identification of key wetlands resources prior to the commitment of development capital has helped to reduce the number of contested permit applications.

Once the watershed sequence is complete there will agency activity in all regions -- keyed to the watershed cycle/steps (i.e., Watershed 1 will be convening watershed teams and having watershed meetings; Watershed 2 will be implementing strategic environmental information collection plan; Watershed 3 will be conducting watershed assessment; etc.). As participating agencies begin organizing their activities in watersheds around the state according to the cycle, other programs and projects will begin to adopt the watershed approach cycle on a voluntary basis. Timing and programming of municipalities, counties, etc. will begin to fall into line with the cycle. However, there will always be contingencies and program activities that will not be included in the watershed cycle.

The Subdivisions Department of the DEQ deals mainly with on-site wastewater treatment. The DEQ reviews the plans and the county implements them.

What is the payoff for adopting a watershed approach?

- Buy-in by stakeholders resulting in more cooperation and less conflict.

- Use of strategic information collection (including monitoring) will allow the development of uniform data collection methods, which will make people more willing to collaborate for data collection.

- By working in conjunction with other agencies and collaborating on management actions, more resources will be available.

- More resources can be focused on restoring BMPs, as opposed to emphasis on implementing NPDES permits.

- The agency can make better decisions because more information is available; more emphasis will be placed on long-term quality decisions.

How does implementation of the watershed approach cycle work? Other states have used a phased implementation approach -- incorporating programs and resources into the approach over time. That is provide for a transition period. A transition plan is part of framework development.

How is monitoring conducted under a watershed approach? Developing and implementing a strategic monitoring plan is one of the steps of the watershed approach. Monitoring occurs throughout the watershed cycle. However, the purpose and objectives change as the cycle proceeds. There are basically three categories of monitoring, that are included in a watershed approach:

- Ambient Monitoring - long-term ambient network, fixed stations for status and trends;

- Compliance monitoring - assesses how well people are implementing controls;

- Special studies - identify special issues within the watershed which are not being addressed by normal monitoring. For example identifying the scope and magnitude of a specific stressor for management strategy development, monitoring measures of success (e.g., environmental indicators)

Concerns were raised about not addressing issues in all basins at the same time - e.g., the GMU that isn't implemented until year 5 may be neglected. Activities will not be discontinued across the board. Phased implementation and contingency funds will continue essential services to other areas of the state. As the watershed sequence continues an increasing proportion of the state will be involved in some step of the watershed cycle. The sequencing is based, at least in part, on existing priorities and location of existing activities. The purpose of a transition plan is to minimize the impact of watershed implementation.

Several participants commented that the watershed framework would make a much more consolidated approach for including the public in the decision making process.

Assessment and Prioritization:

The purpose of the watershed assessment component is to tailor environmental objectives to specific local conditions. There is strong interest and trend to reduce the use of general national objectives and replace them with more meaningful environmental indicators based on regional/local background environmental baselines. The slides included in Attachment A provide an overview of the process described that could be used in the watershed approach to develop assessment endpoints, environmental indicators, measures of success, and management objectives for Montana watersheds.

Environmental objectives for Alaskan streams and fisheries have been using this technique to develop consensus forestry best management practices. The process includes an assessment of the riparian corridor, soil type, steepness of slope, proximity of slope to stream, seasonal use of stream by fish and wildlife, and other factors to determine the optimal width of the buffer strip.

DEQ funding comes from primarily two sources in Montana, the federal government and permit fees. Under the watershed approach, funding would be handled as a general block grant. Stakeholders evaluate the geographic management areas (i.e., watersheds), determine priorities, and assign funds from the block grant to address targeted concerns. Priority setting and targeting background materials are included in Attachment B.

There was a concern that permit fees must be left in the permit program, and can't be reassigned to other priorities.

GENERAL WORKSHOP QUESTIONS AND RECOMMENDATIONS

Questions (multi-media) --> Environmental Quality Management Area

(1) How do we use the framework to bridge the coordination gap between the functional divisions? How can it serve that purpose?

(2) Summarize watershed approach and how it would support the proposed organizational structure.

(3) List advantages of using the watershed approach in addressing problems facing DEQ in general. Use watershed approach to fine tune current proposal.

(4) What are the benefits of a watershed approach (clearly define)? What are the advantages and when? What are the benefits to the public?

(5) How does DEQ use this approach to gain public and legislative support for agency goals and actions?

(6) How can we show that this process helps DEQ to more effectively identify priority environmental needs and more efficiently deliver the services to these needs? How can we use it to explain those areas where we are unable to deliver support (i.e., to justify future direction)?

(7) Will public and other agencies be involved in the framework development process (to ensure later buy-in)?

(8) How will the process reduce duplication of effort between agencies and programs and increase efficiency and quality of decisions in the decision making process?

(9) How will this process make DEQ more informed and to make better decisions?

(10) Stress that the approach is a completely different solution-oriented approach. This approach is oriented to the local citizens and solicits input and cooperation from citizens and local, state, and federal government.

(11) How can the watershed process help accomplish the necessary transition from a reactive development focused management approach to a proactive resource-based management approach?

(12) How can the watershed approach improve efficiency by cooperating with other agencies and sharing resources?

(13) How can the watershed boundaries (size) be determined to minimize the difficulties of going beyond political boundaries? How many watersheds should DEQ designate (resource management constraints)?

(14) How will the watershed approach better protect and improve the multi-media ecosystem (chemical, physical, and biological)? How to protect media quality?

(15) How will the watershed approach allow us to make our individual jobs more efficient?

(16) Need to be honest - what are the immediate hurdles to developing and implementing the watershed approach? Identify resources necessary.

(17) From the public perspective, how could watershed approach help consolidate multiple agency response to problems?

(18) How can the watershed approach reduce the need for official enforcement?

Supplement to (6) and (10) - The watershed approach is an iterative process that is open to amendment at any point along way and is driven by local needs.

A participant suggested that DEQ may not want to call this the watershed protection approach, as this might put off the other divisions (e.g., air) from becoming involved. Suggested alternate names for the watershed approach include:

- Regional Integrated Environmental Management
- Environmental Quality Management Area

The answers to the above formulated questions are provided below. The answers have been grouped since a number of questions have related topics.

(1),(3),(5),(13)

- There is a need for various components that work with the resource. Internal teams to improve coordination between divisions. Regional teams that promote comprehensive understanding of problems/solutions for resource. Approach could help bridge gap in NEPA scoping (better consistency between public and agency's perception of problems).

- Watershed approach helps implement (1-stop shopping) for services and permits. Basin coordinator takes responsibility for being contact with public. Expand beyond permitting to information management, etc.

- Better chance of grass roots support. Promote better understanding of actions in legislature and public via watershed plans and process.

(2),(3),(6),(8),(9),(10),(11),(12),(14)

- Multi-discipline approach -- watershed approach cuts across media boundaries.
- Advantages regardless of eventual organizational structure.
- Features - see watershed approach features.
- Add Implementation
- Documentation of process/accomplishments
- Uses environmental objectives -> sustainability of environmental ecosystem.
- More meaningful involvement of the public.
- Promotes local/public direction of DEQ action.
- Long-term commitment.
- Consistency across program lines - products from other program activities can be used in other areas.
- Clear management direction.
- Provide basis for assigning responsibilities among/between programs.
- Development is strategic planning, watershed plans are tactical.
- More explicit rationale (jointly developed) for priorities.
- Brings together all available environmental data for decision makers. Concerns/problems made better by information brought to the process by stakeholders.

(4),(5),(6),(15),(18)

- More efficiently and effectively fulfill DEQ's mission.
- Public knows management direction and priorities well in advance priorities in advance of implementation.

- Solutions tailored to particular basins/watersheds.
- Pollutant trading and other innovative management options.
- Single point of contact.
- Improved public participation and education.
- Industrial road mapping.
- Improve legislative focus and understanding. More tangible understanding of how environmental efforts are being spent.
- Plans tell when. Provides realistic timeframe. Balance expectations/accountability.
- Stakeholder plan.
- Regulates facilities equitability.

(7)

- Recommend stakeholder involvement in framework development process

(16)

- Block grants - dollars last year were given to groups with watershed-based projects.
- Have to delineate basins - 16 have already been designated.

A "checklist" of example decision topics has been included as Attachment C.

(17)

- Priority setting.

Next Steps:

A summary of the meeting will be produced and distributed to all participants.

If interest exists within the DEQ for adopting the watershed approach, DEQ needs to state to the Director their interest in pursuing the watershed approach.

If the DEQ employees are interested, then the tasks are to:

1 - get the Director on board
2 - get a work group formed to produce the statewide watershed approach framework

The summary document will also be sent to the Director.

NOVEMBER 15
Montana Association of Conservation Districts Annual Meeting - Great Falls

The statewide watershed framework and approach was the subject of two sessions of the annual meeting. Each session was well attended (approximately 120 people total). Participants had many questions regarding the watershed approach and the role Montana Conservation Districts could play within the framework. Most participants supported a partnership involving DEQ on a watershed approach. There seemed to be a general willingness to participate in the development of a statewide watershed framework.